Aalto University
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THE INFLUENCE OF GENDER COMPOSITION IN TOP LEADERSHIP ON FEMALE CEO SUCCESSION

Evidence of gender spillovers in Finnish stock listed firms

Master's Thesis

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Abstract

Finland performs amongst the top countries in gender equality on boards of directors, with an average female representation of 29% in publicly traded firms. In addition, 24% of executive team members in these firms are women. However, the alarmingly low share of female CEOs (8.9%) constitutes an issue for firms, as they may not be deploying the best available talent. Gender inequality in top leadership also has societal implications, as global competitiveness requires the private sector to utilize resources in an optimal way.

The purpose of this study is to explain how the likelihood of female CEO succession is affected by the gender composition of the board of directors and executive teams. The focus is on CEO successions which occurred in publicly traded Finnish companies between the years 2015-2019.

Data on 115 CEO successions were collected from the annual reports of 73 firms listed on the Helsinki Stock Exchange. During the timeframe, 15 women were appointed to the CEO position.

Using binary logistic regression, a significant positive relationship was found between the likelihood of female CEO succession and the number of female directors and female executives. This indicates that increasing the number of female CEOs requires systematic improvement in gender composition of executive teams and boards.

These findings contribute to the literature by showing that instead of the number of female directors impacting female CEO succession in isolation, the joint effect of female directors and executives has a significant impact on the process. In terms of managerial implications, the findings suggest that by systematically supporting equal career development, managers can ultimately enhance equality in the top leadership.

Keywords Women on boards, female CEO, CEO succession, leadership diversity

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Tiivistelmä

Suomi on sijoittunut viime vuosina lukuisten tasa-arvovertailujen kärkeen. Naisten osuus pörssiyhtiöiden hallituksissa on keskimäärin 29% kun taas johtoryhmissä se on 24%. Naistoimitusjohtajien osuus (8.9%) on kuitenkin yllättävän alhainen. Tämä voi olla ongelmallista yrityksille, koska ne eivät välttämättä hyödynnä parhaita mahdollisia resursseja yrityksen johdossa. Samalla yksityisen sektorin kansainvälinen kilpailukyky saattaa kärsiä, mikä voi aiheuttaa myös yhteiskunnallisia haittavaikutuksia.

Tämän tutkimuksen tavoitteena on selvittää, miten pörssiyhtiöiden hallitusten ja johtoryhmien sukupuolijakauma voi vaikuttaa naistoimitusjohtajien valinnan todennäköisyyteen. Tutkimus keskittyy vuosien 2015-2019 välillä julkistettuihin toimitusjohtajanimityksiin Helsingin pörssissä.

Tutkimusaineistoksi kerättiin aineistoa 115 toimitusjohtajanimityksestä 73 pörssiyhtiössä näiden yritysten vuosikertomuksista. Tällä aikavälillä yhteensä 15 naista nimitettiin toimitusjohtajan tehtäviin.

Logistinen regressio osoittaa, että naistoimitusjohtajan valinnan ja naisten hallitusjäsenyyksien sekä naisjohtajien määrän välillä vallitsee merkittävä positiivinen suhde. Tämä osoittaa, että naistoimitusjohtajien lisääminen edellyttää tällä hetkellä naisten määrän systemaattista kasvattamista muissa ylimmän johdon tehtävissä sekä yritysten hallituksissa. Naisten määrän lisääminen vain hallituksessa ei yksin ole riittävä toimenpide.

Tutkimus tukee kirjallisuutta osoittamalla, että hallituksen sukupuolijakauman lisäksi myös johtoryhmän sukupuolijakaumalla on merkittävä vaikutus naistoimitusjohtajien valinnan todennäköisyyteen. Tuloksia voidaan hyödyntää liike-elämässä: tukemalla naisten urakehitystä, johtajat voivat vaikuttaa tasapainoisemman sukupuolijakauman saavuttamiseen ylimmässä johdossa.

Avainsanat Naiset hallituksissa, naistoimitusjohtaja, toimitusjohtajan nimittäminen,

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1. INTRODUCTION

1.1. Background

The world is experiencing a movement towards female empowerment in business, which has incited discussion amongst practitioners, politicians and scholars. Finland, along with other Nordic countries, is seen as a forerunner in gender equality. Yet, Halttula and Saikkonen (2020) state that Finnish women still face discrimination particularly at the top of corporate hierarchies. This has been captured by several investigations on gender in the top leadership of Finnish stock listed companies (Halttula & Saikkonen, 2020; Teräsaho & Kupiainen, 2015; Turunen & Linnainmaa, 2018). Indeed, the female representation on the board of directors has been on a steady rise over the past decade. Currently the average share of women on boards is 25% in small firms, and 34% in large firms (Horttanainen & Kajala, 2020). At the same time, on average 24% of executive team members are women. This places Finland within the top 10 OECD countries in terms of gender equality on boards and executive teams.

However, the development of female CEOs shows a different trend. In 2011, Finnish stock listed firms had no female CEOs, and until 2015 only of these firms was led by a woman. Over the past five years, this number has increased to 11, which still constitutes only 8.9% of CEOs. This places Finland 13th in an EU wide ranking of the proportion of female CEOs in the largest stock listed firms (Horttanainen & Kajala, 2020).

The term "top leadership" is used to describe the board of directors, or the corporate board, which is the entity responsible for appointing and overseeing the CEO. In addition, the top leadership includes the CEO and their executive team. Looking at these entities, a clear discrepancy exists between the appointment of women directors and executives and female CEO successions. Although positive development in gender diversity has occurred in recent years, the numbers show that women are still a clear minority in the top leadership,

In response, a variety of non-legal measures have been implemented to improve equality in Finland. These include diversity reporting requirements in the corporate governance code, mentorship programs and active reporting of equality development (Turunen & Linnainmaa, 2018). In addition, politicians, organizations and practitioners have emphasized the active role that companies should take to foster equality and inclusion. Despite these measures the development has been unequal. This calls for further investigation on the mechanisms that enable women to reach the leadership positions on the very top of the hierarchy.

Significant streams of literature have developed around the challenges and enablers that women face in reaching for top leadership positions. However, only a few have investigated the relationship between the gender composition of corporate boards and CEO succession. A key contribution in this stream is the gender spillover theory, which suggests that increasing the number of female directors increases the number of female CEO successions (Matsa & Miller, 2011). Building upon this idea, You (2019) found that a significant increase in the likelihood occurs when the corporate board has three or more female directors. This finding is in line with critical mass theory (Kanter, 1977). While these studies offer key insights into the relationship between female directors and CEO succession, the literature contains several gaps and shortcomings, which this study aims to address.

Firstly, the literature tends to focus on the relationship between the board of directors and CEO succession in isolation, ignoring the role of executive teams. As stated by Horttanainen and Kajala (2019), future CEOs are found form today's boards of directors and executive teams, which indicates that both entities have stakes in the succession process. Based on this insight, this thesis incorporates the joint effect of women on executive teams and boards of directors on female CEO succession. Secondly, the body of previous literature on this relationship is small and most studies focus on the largest corporations in the United States. Although various gender equality investigations have been conducted in Finland, this relationship has not previously been examined in the

Finnish context. Thus, further research is needed to understand the issue in the cultural context of Finland. These considerations lead to the formulation of the research problem and hypotheses for the study.

1.2. Purpose and scope of the study

Previous studies on board gender composition and CEO succession have concentrated on the US market, with some geographical coverage in Norway, Sweden, and Italy. Although Finland performs amongst the top countries in terms of gender equality on boards of directors, it has not received much attention in the literature. Despite the relatively high share of women directors and executives, an alarming lack of females still exists in CEO positions in publicly traded firms. This divide between female appointments to top corporate positions and lack of female CEOs constitutes the key problem that this research aims to address.

The purpose of this thesis is to investigate how the likelihood of female CEO succession is affected by the gender composition of the board of directors and executive teams in companies listed on the Helsinki Stock Exchange. The terms appointment and succession are used interchangeably in this thesis to refer to the selection of a new CEO. As expressed by Horttanainen and Kajala (2020), there is no quick and easy fix to the issue of gender imbalance at the top of publicly traded firms. However, understanding the key drivers of issue can guide decisions and behavior towards the right direction.

The study is conducted using secondary data collected from annual reports of Helsinki stock listed companies on CEO succession events between the years 2015-2019. Thus, the research is limited to publicly available data. Since the sample contained all CEO successions for which the relevant data were available, this can be considered a population study. Before proceeding to the literature review, the significance and contributions of this study are discussed in the next section.

1.3. Significance and contribution

The findings of this thesis are significant from academic, managerial and societal standpoints. The significance of the research on each level is summarized in Table 1. First, while the relationship between gender diversity on boards and appointment of female CEOs has received some attention in the literature, the results have been mixed. Particularly, researchers have disagreed on weather and to what extent the number of women on boards makes a difference in appointment decisions. Furthermore, there seems to be a clear gap in the literature regarding the joint effect of female directors and executives on CEO appointment, which is incorporated in this study. Moreover, where much of the succession research is conducted in the US, this study aims to contribute to the understanding of succession in the context of Finland. In fact, to the best of my knowledge, this is the first study on this particular relationship in Finland. Because Finland is considered a leading country in terms of equality, it creates a theoretically interesting context for research. The research gap is explained in detail in the literature review. In addition, the managerial significance of this developing a more thorough understanding of how managerial actions can contribute to enhancing gender diversity in top leadership. For a societal standpoint, the study offers significant contributions for understanding the mechanisms that contribute to the gender equality gap that still exists in top leadership of corporations.

Table 1 Summary of the research significance and contribution

Area	Significance	Contribution
Academic	Broadening the theoretical understanding of how the gender composition of boards and executive teams can jointly affect CEO appointment. This study is the first on this topic in the Finnish context.	The findings suggest that the combination of female executives and directors is a more powerful predictor for female CEO succession than the absolute number or critical mass of female directors.
Managerial	Understanding how managerial actions can contribute to increasing gender diversity in the top of the corporate hierarchy.	Increasing the number of female CEOs requires systematic improvement in gender composition of both executive teams and boards. Only adding more female directors is not a sufficient enough measure.
Societal	Understanding the mechanisms that contribute to the gender equality gap are important, as Finland can only succeed in global competition when the private sector deploys the best possible resources.	The findings suggest that with the current trend, the number of female CEOs cannot be expected to change before the overall number of women in the upper echelons has increased.

The specific contributions of this study are also threefold. From an academic standpoint, this research makes significant contribution showing that the combined effect of women of executive teams and supervisory boards may have a significant effect on the odds of female CEO succession. The findings suggest that the number of female directors and executives is a strong indicator for the likelihood of female CEO succession. This finding provides a significant contribution to the literature in terms of showing that the combination of female executives and directors is a more powerful predictor for CEO

succession than the absolute number or critical mass of female directors. Most previous research has studied the effect of the board of directors in isolation.

In terms of managerial contribution, there are two main takeaways for firms. Firstly, companies can address the inequality issue by increasing the number of women executives and directors, to increase the pool of candidates and decision-making power of women. Secondly, by acknowledging this trend, firms can make conscious aims to break the pattern and consider female CEO candidates even before the number of women on boards and executive teams increases. Chapter 6 elaborates on the practical implications for firms.

Lastly, while not much research has focused on Finland, this study also makes a contribution to Finnish society. This research explains factors that contribute to the gap between a relatively high degree of female directors and low degree of female CEOs in Finland. This understanding can contribute to creating new mechanisms to bridge this gap. The findings suggest that with the current trend, the number of female CEOs cannot be expected to change before the overall number of women in the upper echelons has increased.

1.4. Structure of the thesis

The thesis proceeds as follows. Chapter 2 contains the literature review, which explores the existing literature on the topic of gender spillovers and challenges for gender equality in top leadership. The literature presents relevant concepts and theories to frame the empirical part of the study. The literature review is followed by a presentation of the research design and methods. This section includes the philosophical and ethical considerations of this study. In addition, a description of the methodological approach and the procedural steps taken in data collection and analysis are explained in this chapter. Chapter 4 presents the findings from the statistical analysis, which are interpreted and discussed in Chapter 5. Finally, Chapter 6 includes a summary and implications of the study, and suggestions for further research.

2. LITERATURE REVIEW

2.1. Introduction

The purpose of this thesis is to investigate how the likelihood of female CEO succession is affected by the gender composition of the board of directors and executive teams in companies listed on the Helsinki Stock Exchange. The main bodies of literature on the topic relate to gender in organization, organizational behavior and corporate governance.

The literature review serves two objectives. Firstly, it introduces the foundation and context of the research problem. More specifically, this section discusses the factors that influence the career development opportunities of women. Key theories and concepts on the macro, meso and micro level are highlighted, providing important insight into the causes of inequality in firms. At the macro-level, institutions and markets play central roles in the career development of women. The meso-level focuses on the organization and its culture, in which concepts such as discrimination, tokenism, elite networks and gender compensation gaps are emphasized. Finally, focus is shifted towards the micro-level, which explores the individual in the organization. Here, the emphasis is on managerial aspirations, work-family conflict, and submissive group behavior, which may hinder career development on the individual level. This theoretical foundation is critical for drawing insights on the factors that influence female CEO succession.

The objective of the second half is to explore existing research related directly to board gender composition CEO succession, to identify the gaps and inconsistencies in the literature. This part focuses mainly on corporate governance literature. The insights drawn from this stream of literature are used to create the theoretical framework for the study. The main contributions in this stream are summarized (Table 3) towards the end of this chapter. The two main theories upon which this study builds are the gender spillover theory (Matsa & Miller, 2011) and critical mass in female CEO appointment (Kanter, 1977; You, 2019). These theories indicate that increasing the number of female directors in general increases the odds of female CEO succession (Matsa & Miller, 2011),

and a particular increase is seen when the number of female directors reaches the critical mass of three (You, 2019). In addition, other key concepts relating to women on boards and CEO succession are introduced. Based the need for additional research in this area, three hypotheses are presented at the end of this chapter for further empirical testing.

2.2. Factors that influence the career development of women

As stated by Halttula and Saikkonen (2020), women still face significant obstacles in their path towards the top positions in the corporate hierarchy. The literature shows that these obstacles originate from institutional and governmental influences all the way to individual behaviors, challenges and decisions. Therefore, the theoretical contributions are discussed in three sub-sections: macro, meso and micro influences. As presented by Jeurissen (1997), the macro-level incorporates institutions, governments, national culture and markets. A brief assessment of theories in this stream is presented first. The meso-level focuses on the organization, it's culture and structure (Jeurissen, 1997), which is the focus of the second part. Third, the focus is directed to the micro-level, which discusses the individuals within the organization. Each of these levels aim to explain the phenomenon from a different perspective but it is important to note that they are all intertwined. Collectively, these theories explain the conditions in which firms tend to reject female candidates in high ranking positions.

2.2.1. Macro-level influences

Although the empirical part of this study focuses mostly on the organizational and individual levels, it is important to understand how female career mobility is influenced by macro forces. Firstly, some countries have aimed to address gender inequalities by imposing legal gender quotas. Hence, a brief review of literature in this stream is presented first. Secondly, a significant pool of literature is developed on institutional

theories on females in leadership, which are discussed next. These theories explain some of the institutional context of this study.

2.2.1.1. Gender quotas

Gender diversity in top leadership has wide societal implications which national governments have aimed to address by different mechanisms (Torchia, Calabrò, & Huse, 2011; Iannotta, Gatti, & Huse, 2015; Terjesen, Aguilera, & Lorenz, 2014). Some countries, such as Norway and Italy have chosen to impose quota legislation to address this issue (Huse, 2011). However, research has produced mixed results on the effectiveness of board quotas. On one hand, Torchia, Calabró and Huse (2011) argue that Norway has benefitted from gender quota legislation, as the number of directors has increased drastically in a short period to constitute nearly half of the board. On the other hand, Iannotta et al. (2015, p. 1) found that quotas on their own are insufficient for increasing female representation on board since they can increase the risk of "institutional isomorphism or social legitimacy". This indicates that quotas can impose negative constraints for companies, which may force them into a similar shape that is not necessarily optimal. The challenges of quotas are recognized by Turunen and Linnainmaa (2018) who argue against imposing quotas in finland. The authors emphasize that Finland can effectively overcome gender inequality in top leadership by non-legal means. This prompts an assesment of the other institutional influences that factor into the career development of women.

2.2.1.2. Institutional influences

While the effectiveness of quotas has been disputed, other countries like Finland have chosen to pursue a non-legal route for increasing female leadership.Thus in the literature, female inclusion in top executive and director positions is observed from a wide institutional lens, incorporating legal, cultural influences (Grosvold & Brammer, 2011) as well as political, economic and social structures of countries across the world (Terjesen & Singh, 2008). Some of the factors include equal pay (Torchia et al., 2011), family

norms, education and economic institutions (Grosvold & Brammer, 2011). Furthermore, the proportion of women completing tertiary education, and well-established social security systems were found to be positively correlated with increasing female executives and directors (Tyrowicz et al., 2020). Looking at the institutional environment of Finland, these findings would indicate that a high degree of gender equality would be found from the upper echelons of companies. While board gender equality in Finland has risen over the years and ranks among the top countries in Europe, improvement is still needed particularly on the executive level (Turunen & Linnainmaa, 2018).

Recent research on female representation on executive boards and supervisory boards in Europe has, however, presented interesting new insights into institutional enablers of gender equality in upper echelons (Tyrowicz et al., 2020). First, general full-time female participation in the labor market may not be correlated with gender equality on management or supervisory boards as previously argued (Tyrowicz et al., 2020). Furthermore, from an institutionalized cultural standpoint, the authors found that countries that value self-expression and happiness over economic prosperity should see fewer female directors. Terjesen and Singh (2008) also found that countries, like Finland, with longer histories of women involved in politics are less likely to exhibit high numbers of female directors on corporate boards. These finding may provide explanations to the trends seen in Finland, where the overall level of full-time employment for women has not necessarily translated to equality at the top of organizations (Turunen & Linnainmaa, 2018). Clearly, there are mixed findings on the macro-level influencers of gender equality on the top of organizational hierarchies. Thus, explanations may be found from the organizational level, looking at the spillover effects between corporate boards, executive teams and CEOs. Before further exploring this idea, understanding why firms benefit from increasing female representation is important from a market perspective. Therefore, a brief review of the literature on females and firm performance is presented next.

2.2.2. Meso-level influences

The literature shows that the career advancement of females is not exclusively impacted by macro-environmental factors. In fact, there are various theories aimed to explain the meso-level influences that enable and disable upward career mobility for women (Gabaldon et al., 2015). These organizational barriers have created the "glass ceiling" which prevents women from advancing upward in organizations like their male peers (Matsa & Miller, 2011). Behind the glass ceiling are various theories of social psychology and organizational behavior. The theories of focus in this section are chosen based on reoccurring themes in the literature. First, attention is drawn to discrimination, which Gabaldon et al (2015) list as one of the most predominant theories at the organizational level. Second, the literature on tokenism (Kanter, 1977) is explored to understand why solo women cannot properly influence organizational decision making. Third, the old boys' and golden skirts' networks (Huse, 2011) literature is examined. This theory highlights the possibility that elite networks established by both men and women may decrease demand for candidates outside of the network. Lastly, the role of the gender compensation gap is discussed.

However, before proceeding to the challenges that women face in the organization, an overview of literature on how women in top leadership influence firm performance is in place. This creates the foundation on why increasing the number of women in leadership is beneficial at the firm level in the first place.

2.2.1.2. Women influencing firm performance

Scholars have found female CEOs to have a positive impact on firm performance (Cook & Glass, 2015). Specifically, companies led by a female CEO with more women on the board were found to perform better (Cook & Glass, 2015). This indicates that the number of female directors matters for women to gain support and build coalitions, which will be further discussed later in this chapter. Furthermore, female CEOs tend to be more risk

averse and systematic in terms of risk-taking than male CEOs, which studies have shown lead to stronger long-term performance (Gomez-Mejia et al., 2019; Khan & Vieito, 2013). Overall, the literature shows that appointing a woman as CEO has organizational and financial benefits in addition to promoting social equity. Thus, from a theoretical standpoint, it is in the best interest of firms to equally consider female candidates for top executive positions.

In addition, researchers have investigated the relationship between women on the board of directors and firm performance. The board of directors consists of experienced individuals who are chosen to advise and control the executive actions of a corporation (O'Neal & Thomas, 1995). The connection between boards and firm performance is complex due to the variety of macro and micro environmental forces that may factor into the relationship. Thus, it can be assumed that research on this topic has produced largely mixed results.

However, there is an abundance of evidence that gender diverse boards can produce positive organizational change. For instance, increasing the number of female directors was found to have a positive impact on firm strategy by increasing the volume and complexity of competitive actions (Kolev et al., 2019). This relationship was intensified by the effect of having a female CEO, demonstrating that including women in different levels of decision making can further improve competitiveness (Kolev et al., 2019). Furthermore, critical mass theory, which is explained in detail later in this chapter, has also been linked to other aspects of business. By applying critical mass theory, researchers have found that increasing the number of female directors has had positive effects on innovation (Torchia et al., 2011) and financial performance (Lafuente & Vaillant, 2019). Indeed, women directors are found to contribute positively to many aspects of performance, demonstrating the need to increase their representation on boards.

Accoring to Jeurissen (1997), firms adapt to market signals, and tend to relocate resources and workforce accordingly. Thus, acknowledging the positive impact that women can have on firm performance should lead to more women in leadership. However, although

literature offers evidence on the benefits of having female leaders, this has not necessarily been the case. There are still several barriers in place at the organizational level that hinder female advancement to top positions. The influences have received attention from scholars in the fields of social psychology, organizational studies and management. The following section offers an in-depth look at one of the key obstacles that women have faced in the workplace for decades, which is discrimination.

2.2.2.1. Discrimination in the workplace

As presented by Gabaldon et al. (2015), discrimination is one of the critical theories explaining why some organizations have developed cultures that feed to unequal treatment. Gabaldon et al. (2015) summarize the key research on discrimination faced by women in leadership (Table 2), upon which this literature review builds by including an overview of more recent theories. Although researchers have approached this issue in a variety of different ways, most have arrived at the same conclusion: competence does not guarantee career advancement for women in the same way it does for men (Heilman, 2001; Wolfers, 2006; Phelps, 1972).

One of the foundational theories in this space is considered to be statistical discrimination (Phelps, 1972). Phepls (1972) explains how perceptions of women being inferior in qualification, reliability and leadership skills may cause discriminatory behavior towards them. A critical remark here, however, is that these views are caused by stereotypes and lack fact-based reasoning (Phelps, 1972). The effect is further strengthened by information asymmetry. Consequently, while other relevant information about individual qualifications, skills and performance is lacking, the tendency to rely on preconceptions increases (Phelps, 1972). In gauging the biases and expectations held by the general public, stock markets are considered a good indicator reflecting how investors perceive the value and future prospects of firms (Wolfers, 2006). Hence, Wolfers (2006) argues that mistake-based discrimination, referring to regular underestimation of the skills of

women, could be identified from the undervaluation of firms led by women CEOs. However, Wolfer (2006), as many other researchers face the challenge of producing statistically significant results due to the overall lack of female CEOs in the sampled firms.

On the other hand, a paradox between the expected behavior of women and business leaders clearly exists (Heilman, 2002). Heilman (2002) bases the taste-based discrimination theory on two types of stereotyping: descriptive expectations about what female leaders are like and the prescriptive expectations on how they should behave. Heilman (2002) further explains the preconceived differences between sexes in relation to business and leadership, which are generally described by masculine characteristics. Men are stereotypically considered more aggressive, goal-oriented and rational, which are characteristics associated with success in business. Fritz and Knippenberg (2017) also categorize these traits as agentic orientation. Furthermore, agentic orientation, is associated with ambition, competitiveness and dominance (Fritz & van Knippenberg, 2017). Because women in general are perceived more nurturing and service-oriented, and inferior in "masculine" traits, they may be labeled unfit for leadership positions due to this description-based bias (Heilman, 2001). The sensitive and relationship-oriented traits associated with women are categorized as communal orientation (Fritz & van Knippenberg, 2017). The institutionalized expectation that leadership traits are masculine steer firms to select male candidates. Consequently, the demand for female candidates decreases.

Table 2 Summary of discrimination theories

Type of discrimination	Author (year)	Description
Statistical Discrimination	Phelps (1972)	The perception of performance related to gender stereotypes.
Mistake-based Discrimination	Wolfers (2006)	Regular underestimation of female skills.
Taste-based Discrimination	Heilman (2002)	The association of leadership and masculinity which directs preference towards male leaders.
Implicit Discrimination	Bertrand, Chugh, & Mullainathan (2005)	Unconscious preference towards certain types of leaders.
Gendered Market Effect	Longin & Santacreu-Vasut, (2019)	Discrimination against the opposite sex due to support for own.

A more recent explanation for market reactions to female-led companies is the argument that markets are gendered (Longin & Santacreu-Vasut, 2019). The gendered market theory alludes that women are inclined to react positively to female CEO appointments while men, in general, tend to react negatively (Longin & Santacreu-Vasut, 2019). In the case that a male CEO is appointed, responses are respectively reversed. This indicates that rather than purposefully rejecting the opposite sex, representatives of both genders tend to support demographically similar candidates (Longin & Santacreu-Vasut, 2019). This idea is further developed in CEO succession literature, which is discussed later in this chapter. While the premises for the gendered market theory are not necessarily based on intentional discrimination, the outcomes may be similar, leading to the strengthening of an existing male majority.

Indeed, the literature shows that discrimination may not stem from conscious agendas. In fact, drawing upon studies on gender in the CEO succession process, the gendered market effect may also be a product of unconscious discriminatory behavior caused by the natural inclination to support candidates with similar backgrounds (Cornell & Welch, 1996). Related to this, Bertrand, Chugh and Mullainathan (2005) introduce the concept of implicit discrimination. Implicit discrimination refers to unconscious associations that translate to negative attitudes towards, for instance, minorities. This can be considered a significant contribution to the discrimination literature, as implicit discrimination may be more difficult to recognize, and thereby more challenging to change. However, when implicit discriminatory behavior is recognized, the authors suggest that it may be remedied by including minority members in the hiring process, both in the phase of screening candidates and in the context of interviewing candidates (Bertrand et al., 2005). Whilst the level of intent underlying the behavior may vary, markets in general react negatively to announcements of female CEO appointments due to the lower number of active female investors (Longin & Santacreu-Vasut, 2019). In addition, if CEO succession is assumed to follow the gendered market theory, increasing the number of female CEOs can be assumed to require increasing the number of female directors taking part in the appointment decision.

Yet, in some cases, minority group members may also reject others from the same group. The literature offers evidence on the argument that women strategically reject successful women as a form of self-protection against social comparisons to themselves (Parks-Stamm et al., 2007). Parks-Stamm et al. (2007) found that while participants of both genders penalized successful women, the behavior of female participants was connected to their self-evaluation of their personal competence. Moreover, receiving positive feedback reduced the penalties that female participants gave to successful women. This indicates that instead of empowering each other, powerful women may strategically aim to reject other powerful women in fear of facing negative comparisons. This phenomenon has also been referred to as the queen bee syndrome (Staines et al., 1973). Similar findings were made by Bonet, Cappelli and Hamori (2019), who argue that the appointment of female executives slows down once there are a few women in the upper echelons of

corporations. Contradictory to the idea that females support females on the corporate top, this may indicate that women may have a tendency to reject other women from attaining similar positions. Overall, discriminatory behavior may be driven by a variety of causes. Nevertheless, discriminatory behavior engrained in an organizational culture limits the career advancement opportunities for women. This may lead to a culture of tokenism, where solo women are only included on boards and executive teams for image reasons. The following section explores this phenomenon in more detail.

2.2.2.2. Tokenism in top leadership

With the numerical representation of women on boards still remaining generally low in organizations, "tokenism" has become a common issue in boards with one or two female directors (Kanter, 1977). Kanter (1977) found that when there are fewer women on higher levels of the organization, gender becomes a differentiating characteristic that attracts attention and creates expectations which shape their behavior. As explained by Kanter (1977), solo women on male dominated boards are prone to be seen as representatives of their gender rather than equal peers, which may be manifested in discrimination or hyper-scrutiny of these women. Consequently, the turnover and rate of failure of women in such positions appeared much higher than that of men (Kanter, 1977). While the main argument of increasing diversity on teams is to include a wider set of perspectives and different ideas, token females are often not brought in for their talent, experience or views but rather to increase legitimacy in the eyes of key stakeholders (You, 2019). Although the number of female directors has been on a steady rise particularly in the Nordic countries, "tokenism" is still often present with a representation of only one or two minority board members. This makes it challenging or impossible to create powerful coalitions (You, 2019) in voting for central causes such as strategic directions or executive appointments.

The literature also explains how the treatment of token females contributes to their higher turnover rate and the challenges of proving their competence as the minority member.

From interviewing 50 female directors in Fortune 100 companies, Konrad et al. (2008) discovered that on boards with only one female, the risk of the woman director being ignored, stereotyped, put on the spot or excluded is high. The authors found that despite minor improvement, tokenism still exists with two women on the board, where they often face blame for conspiring if they work closely together. Moreover, behavioral studies on male dominated boards suggest that the competitive environment of the Fortune 1000 companies, also seen as the most powerful positions in business, pin men to compete with each other (Konrad et al., 2008). Interestingly, Konrad et al. (2008) found that female directors seemed to be left out of this competition, causing them to feel ignored and treated like female representatives rather than equals. In a group setting, men tend to express opinions more frequently whereas women tend to talk only when they feel like they have something valuable to contribute (Konrad et al., 2008). Similar findings were made by Ely and Thomas (2001), who argue that these types of negative behaviors towards minority subgroups decrease the effectiveness of diversity in a work group. On the other hand, diversity can influence how the group functions when women were integrated, legitimized and treated with fairness (Ely & Thomas, 2001). This shows that companies that treat women as tokens do not reap the benefits of having diverse executive teams and boards, which they could potentially achieve by fair treatment.

2.2.2.3. Old boys' and golden skirts' networks

On the meso-level, many have theorized that the scarcity of female CEOs is a result of false preconceptions of female competence and reinforced negative stereotypes. However, another stream of literature has developed around the effect of elite networks on top leadership appointment. The more traditional of these has been coined the old boys' network (Adamson, 2016; Konrad et al., 2008). The old boys' network refers to an informal social system in which men in the highest executive positions form alliances, where power is transferred among an elite group and maintained within an "inner circle" (Adamson, 2016). In this context, women tend to face discrimination because of the threat they pose on the status quo (Adamson, 2016; Konrad et al., 2008). Although the nature

of these networks is strictly informal, evidence of the existence of such networks is found in several countries, such as the United States, Korea, and Norway, to highlight a few (Konrad et al., 2008; Ahn et al., 2017; Huse, 2011). Furthermore, the scope of these networks may differ significantly, but the common denominator is that the social ties are established and maintained to influence corporate decisions or external decisions that may affect the corporation or the individual within the network (Ahn et al., 2017). These relationships may be external, with executives, government officials, directors or media representatives, or internal, between the CEO, other executives and board members (Ahn et al., 2017).

A challenge raised by authors is how to shift from a relationship-based selection of candidates to a system based on merit and expertise (O'Neal & Thomas, 1995). O'Neal and Thomas (1995) found that most directors are appointed based on personal, professional and social networks. Consequently, many corporate boards seats in different firms are held by the same group of men, which increases demographic homogeneity across companies. In addition, companies where recruitment is network-based may not receive the most competent and qualified leadership. In relation to executive appointment, Ahn et al. (2017) found that CEOs prefer candidates with similar regional and educational backgrounds and previously established social ties, supporting the old boys' network theory. Similar findings have also been linked to homophily effect and social identity theory, which are discussed in more detail later in this chapter (Elsaid & Ursel, 2011; Byrne et al., 2019). Therefore, as old boys' networks govern board and executive appointments, it may be challenging for women to attain higher ranking positions. However, preserving male predominance in cultural and social norms is not the only driver for this behavior. Researchers have also identified some tangible ramifications that cause men in these networks to feel threatened (Adamson, 2016). For instance, because women receive notably lower compensation, male executives fear that their salaries and other benefits would decrease as a result of more women entering the upper echelons of corporations (Lalanne & Seabright, 2011). Thus, keeping women away from the corporate elite may be an attempt to preserve the higher compensation and benefits to which men are accustomed.

Recently, however, an opposite trend has also been identified by scholars. Huse (2011) argues that the introduction of board gender quotas in Norway has caused a group referred to as the "golden skirts" to replace the traditional old boys' network. The term "golden skirts" describes a group of women that hold directorships on multiple boards (Huse, 2011). In fact, Huse (2011) found that there are now more women than men holding positions on multiple corporate boards in Norway. Simultaneously, this means that the total number of women on boards of directors remains lower than that of men. The golden skirt effect has also been acknowledged in Italy, where quota legislation for boards has also been enforced (Rigolini & Huse, 2019). Whereas the old boys' network theory argues that the power positions are preserved though deliberate efforts to maintain a status quo, the golden skirts effect is argued to be the result of institutional pressures (Rigolini & Huse, 2019; Huse, 2011). Particularly in countries where quota legislation is enforced, companies struggle to increase female representation on boards sufficiently enough to meet the requirements. Therefore, instead of demand for female leaders increasing organically, firms are forced to fill the female board seats fast. This results in the appointment of the most experienced women to as many boards as possible. While this increases appointment based on merit, it also decreases board independence (Huse, 2011).

Indeed, appointing executives and directors from a select elite network can decrease the chances of outside candidates to be chosen. Rigolini and Huse (2019) discovered that a significant percentage of women directors in Italy had a close relationship with the firm founders (21%) or the same elite educational (40%) or family background (31%). Furthermore, over half of the sample were connected to organizations closely involved with recruitment of female directors (Rigolini & Huse, 2019). While dismantling and replacing institutionalized patriarchal networks could be seen as a positive movement towards enabling more female leadership, the golden skirts' network appears controversial. As seen in the literature, golden skirts may present a fast remedy for the gender imbalance issue. However, it may also decrease the chances of women outside the network to attain high ranking positions. Indeed, the case of Italy demonstrates how educational and social backgrounds become dominant variables in the selection of female

directors, which allows top level advancement only for a limited group of women. On the other hand, Rigolini and Huse (2019) argue that the diversity and number of female directors have increased with the introduction of quota legislation. This development may, however, be attributed to the low initial representation of female directors in Italy.

The literature also provides other indications that the situation may be changing. Recent findings show the golden skirts effect has decreased in Norway, indicating that the trend may have been a temporary and immediate result from the imposed gender quota legislation (Seierstad & Huse, 2017). In a study on the 10 highest executive positions in Fortune 100 companies, Bonet et al. (2019) found that females that rise to top executive positions, including director positions, internally do so faster than their male peers. This may indicate that recent institutional pressures have, in fact, increased the demand for female executives and directors. This has resulted in firms offering promotions to women more frequently. Although these barriers still exist in some firms, a positive trend for female appointment seems to be emerging. Furthermore, Bonet et al. (2019) seem to suggest that potential candidates are likely to rise from within companies. Consequently, internal promotion could also drive gender spillover effects. However, the compensation gap between male and female executives still hinders the career mobility of women, which is discussed next.

2.2.2.4. Gender compensation gap

Although positive development has occurred in compensation equality over the recent years, the literature shows that the discrepancy in compensation between male and female CEOs is a significant hindering factor in organizational advancement for women (Adamson, 2016). Keloharju, Knüpfer and Tåg (2016) present rich insight into gender differences in CEO and executive pay in culturally similar context of Sweden (Keloharju et al., 2016). Interestingly, in Sweden, which is considered one of the most egalitarian countries, the average salary gap between male and female CEOs was 7%. What is more, the pay gap for non-CEO executives was 22%. According to the authors, the compensation discrepancy could not be explained by differences in personal characteristics or qualifications of the male and female executives. Thus, there are no rational grounds to why women still receive less compensation for their work than men.

A large gap in executive compensation may be an indication of a non-inclusive corporate culture, which can have substantial implications in attracting female CEO candidates (You, 2019). Thus, known differences in compensation may discourage women from aspiring to top executive positions and signal that they are not as valued as their male peers (You, 2019). Consequently, women may not voice their opinions as strongly, placing them at a disadvantage in the competition for upward movement in the organization (You, 2019). The same phenomenon is present in boards of directors, where women directors are less likely to voice their opinion in the CEO appointment process when the compensation gap is larger (You, 2019). On the other hand, men may perceive the lower compensation of females as a threat to their own higher salaries, due to which they may tend to advocate for male candidates instead of females (O'Neal & Thomas, 1995). Thus, in order to bridge the gap between male and female CEO appointments, equal pay should be used as a tool to signal organizational inclusiveness and equal opportunity. While equalizing financial incentives is one way to encourage females in leadership, there are several individual level challenges on the way. The next part discusses these micro-level influences in more detail.

2.2.3. Micro-level influences

As explained by Jeurissen (1997), macro, micro and meso-level influences are intertwined. This can be seen especially in how individual level influences have been shaped by institutions, organizations and society. As expressed by Keloharju, Knüpfer and Tåg (2016), the personal challenges that females face may include educational decisions, career aspirations, risk aversion, and parental responsibilities. In this section, three relevant concepts are highlighted from the literature, which all influence the ability of women to rise up the corporate hierarchy. First, work-family conflict is discussed particularly from the individual perspective (Byrne et al., 2019). Second, literature on female managerial aspirations is examine (Hoobler et al., 2011). Finally, the submissive behavior of women as the minority in a group is explored (Asch, 1951; Oakley, 2000).

2.2.3.1. Work-family conflict

Gabaldon et al. (2015) list work-family conflict as one of the major obstacles for women in the workplace. Due to societal and biological reasons, women face difficult personal choices when it comes to career advancement. The literature shows that women contribute more hours to family related activities, while also contributing the same hours to work as men (Gabaldon et al., 2015). Keloharju, Knüpfer and Tåg (2016) also discovered that female executives experience more interruptions in their careers and have acquired less work experience compared to male executives. Furthermore, the authors found this to be true despite female executives having fewer children and a lower likelihood of being married than men. This is a further indication that parental expectations continue to differ for men and women, due to which women face more weighty decisions between careers and family.

Byrne et al. (2019) highlight another aspect of work-family conflict, which is referred to as maternal femininity. This refers to female CEOs connecting their personal experience

of motherhood to their role as CEO. In some cases, this was found to have a negative impact on their legitimacy within the firm, as it highlighted feminine characteristics. Combining work and personal life may be a significant obstacle for females accepting a CEO position due to physical, emotional and social reasons. Firstly, balancing the workload with time required to successfully carry out executive duties is difficult to begin with (Byrne et al., 2019). Secondly, female CEOs often perceive this challenging not only from a time-management standpoint, but also from an emotional standpoint by feeling guilt for not being present for their children (Byrne et al., 2019). Thirdly, a vast amount of social pressure is still placed on female CEOs, who were found to face judgement and criticism for taking on the time-consuming professional role instead of focusing on the traditional family-oriented roles expected from women (Byrne et al., 2019). Looking at the literature, it can be concluded women tend to invest more time in family matters, while devoting the same hours to their leadership tasks. This may be one of the triggers for the perceived low managerial aspirations of women, which is discussed next.

2.2.3.2. Managerial aspirations

The role of managerial aspiration is critical in research on CEO appointment, as it serves as a strong predictor for organizational upward movement (Fritz & van Knippenberg, 2019). The literature in this stream offers the general consensus that traditionally, women are perceived to have less ambition to attain managerial roles (Hoobler et al., 2011; Heilman, 2001). Therefore, at the micro-level, women are often perceived not to want to compete for top leadership positions.

However, the degree of managerial aspiration of women is often shaped by macro and meso forces. A stream of literature suggests that the perception of women having weaker managerial aspirations may influence the degree of organizational support that they receive, which negatively feeds into their actual motivations (Hoobler et al., 2011; Heilman, 2001; Adamson, 2016). Hoobler et al (2011) studied Fortune 500 companies to understand how the perceptions of the “opt-out” theory may affect upward movement in

the organization for women. The authors found that managers consistently perceive women as less motivated than men. Subsequently, men received more organizational support for personal development which put them on track to advance to higher management positions. This, in turn increased their aspiration to aim for higher ranking management positions, while women without a similar support system experienced a reverse reaction (Hoobler et al., 2011). The perception that women have less ambition for managerial roles may, in fact, be a result of females traditionally having less promotional opportunities and therefore less managerial experience (Adamson, 2016).

Hoobler et al. (2011) validated the correlation between opportunities for organizational development and managerial aspiration, showing that individuals who receive challenging tasks, training and encouragement in the firm are likely to aspire to higher positions. In line with these findings, effective management, good communication and a strong corporate culture are also seen as catalysts for building organizational identification. This refers to the emotional commitment to the organization and the psychological ownership for the successes and failures of the firm (Hamzafic, 2018). Holding this true, companies which direct organizational development opportunities towards both genders equally should also see more managerial aspiration from women. This idea is validated by Fritz and van Knippenberg (2017) who linked managerial aspiration to organizational identification theory. In fact, contrary to the preconception that communal orientation directly reduces managerial aspiration, the findings suggest that communal orientation may strengthen the leadership aspirations under favorable organizational conditions (Fritz & van Knippenberg, 2017). Particularly when moderated by organizational identification, the levels of managerial aspiration appeared higher for women than men (Fritz & van Knippenberg, 2017). This indicates that companies that devote attention to building a strong culture where employees are equally engaged, should experience more ambition from employees to perform well and move upward in the hierarchy.

At the micro-level, women have to constantly navigate paradoxal expectations set by organizational and institutional pressures. The literature shows that token women that

perform well in “masculine” positions face discrimination, whereas men in the same positions are praised (Heilman, 2001). This is also referred to as a double-bind, which is a situation caused by a behavioral norm where an individual is prevented from reaching a favorable outcome regardless of their actions (Adamson, 2016). In fact, double-binds have historically been leveraged to deliberately oppress women, who have been the less powerful individuals (Adamson, 2016). Placing these constraints on women leaders not only hinders their upward movement within the organization but may also impede their performance, further strengthening the destructive stereotypes (Heilman, 2001). Therefore, the incentive for women to aim for leadership positions is reduced. In addition, the literature highlights the tendency of women to exhibit submissive behavior compared to men, which is the last micro-level factor and is explained next.

2.2.3.3. Submissive group behavior

Traditionally, women have been expected to adapt and blend in rather than voice ideas (Oakley, 2000). Consequently, competent females may not stand out from a pool of dominant males. This behavior has been judged as an indicator of low managerial aspiration, however, it may instead reveal a traditional group dynamic setting between majority and minority group members. In fact, many studies have validated that when minorities consist of only one or two members, they tend to conform to the majority opinions due to group pressure dynamics and the fear of discrimination or hyper-scrutiny (Asch, 1951; Asch, 1955; Torchia et al., 2011; You, 2019). Studies on social conformity and group pressure aim to explain some of the behaviors that occur when females are treated as tokens in a company (Asch, 1951; Asch, 1955). Asch (1951) explains how submissive behavior in groups may lower the degree of subgroup influence, whether it be females or other minorities. In an experimental study, Asch (1951) found that 11 out of 12 times when the rest of the group agreed on the answer that was wrong, the subject would conform to the group opinion despite knowing the right answer.

While group dynamics vary significantly based on differences in the personal characteristics of the members, studies on group pressure demonstrate the tendency for submissive behavior of numerical minorities (Asch, 1951). This theory has later become the basis of much of the research on critical mass in organizational gender studies (You, 2019). Social conformity explains the conditions in which female directors are included in the decision-making process for CEO appointment, but they still tend to conform with majority opinions rather than voicing opposing views. On the other hand, this may show why females struggle to indicate their interest and competence for managerial and executive roles.

Each of the theories presented in this section can affect the work of women on boards. Therefore, a stream of literature has developed particularly on this topic. The following section takes a closer look at this pool of literature, which moves the discussion closer towards the empirical part of the study.

2.3. Gender spillovers in top leadership

So far, this literature review has established the main reasons that challenge career mobility for women. From this point onwards the focus will be specifically on the literature that directly contributes to the theoretical framework for the empirical part of this study. The idea of gender spillovers was first introduced by Matsa and Miller (2011) who discovered that the number of female directors has a positive causal relationship with female CEO succession. Based on this idea, several other contributions have been made on how women support women in corporate leadership to increase their numerical representation altogether. This part includes a review of the key research on board gender composition, gender and CEO succession, and finally, board gender composition and CEO succession. The key research in this stream is summarized in Table 3.

2.3.1. Women on boards

This study aims to understand the effect of women on boards on female CEO succession. Thus, it is important to understand the key stream of literature developed specifically on women on boards. Some authors argue in the favor of critical mass, demonstrating that reaching a certain threshold of female members is enough to facilitate change (Kanter, 1977; You, 2019). Others have argued that more important than critical mass on corporate boards is the proportion of women compared to men (Lafuente & Vaillant, 2019). Authors have also found other director characteristics that may offset the effect of gender, which may be central in explaining the board diversifying process (Zhu et al., 2014). The literature shows that board composition and demographic similarity are key constructs in the CEO succession process, which may ultimately determine the gender of the appointed CEO.

With tokenism still taking place on corporate boards in many countries, scholars have begun to investigate the number of women it takes to have an impact in the corporations in areas such as innovation (Torchia et al., 2011), financial performance (Lafuente & Vaillant, 2019), and female CEO appointment (You, 2019). Kanter (1977) was the first to introduce the idea that the behavior of female directors is dependent on their numerical representation in corporations. Once the minority subgroup, such as females on a corporate board, reaches a certain size, the group dynamic changes resulting in the minority gaining a larger degree of influence (Kanter, 1977). This threshold number after which qualitative changes in behavior can be detected is called critical mass. (Kanter, 1977). Although the theory was initially introduced decades ago, these findings have been validated in several recent studies (Konrad et al., 2008; You, 2019; Torchia et al., 2011).

Indeed, the critical mass theory illustrates how power can be gained through numbers. Consequently, many researchers have aimed to understand the numerical threshold at which the power of minorities significantly increases. Many studies have followed the findings of Asch (1951), who approached group dynamics by studying how social triggers affect submissive and independent behavior in groups among male university students.

In terms of the effect of numbers, Asch (1955) discovered that when an individual's opinion was opposed by one, the effect was minor, whereas with two in the opposition the opinion of the individual was changed 13.6% of the time. More importantly, when the opposition consisted of three the individual's opinion changed 31.8% of the time (Asch, 1955). However, increasing the number beyond three had little effect on the results. Although the experiment was conducted on a male population, the theory has since been validated in gender equality studies in board rooms. According to Konrad et al. (2008), over 100 similar studies have since validated the number of three as the threshold of majority influence.

The literature has also employed other methods to test the relationship between the numerical representation of women and their degree of influence. Some more recent research argues that the female to male ratio is a stronger indicator than a critical mass threshold for the degree of impact female directors exercise (Lafuente & Vaillant, 2019). Lafuente and Vaillant (2019) make the argument that having a female representation of 40-60% on boards has a significant effect on the economic performance of companies. Indeed, the literature leaves the question unanswered whether absolute or relative measurement is more effective. Considering the previously presented arguments that most of the challenges that females face in male dominated groups stem from their minority position, it seems intuitive to focus on the ratio instead of concrete numbers. While boards may vary from 2-15 members, this can make a significant difference in the minority-majority dynamics.

However, Cook and Glass (2015) present contradictory findings about the effect of the number of female directors on their degree of influence in Fortune 500 companies. In fact, the authors discovered no significant correlation between the number of female directors and the appointment of a female CEO. Instead, the authors argue that the relative influence held by women directors does have a positive impact on female CEO appointment. However, the number of female directors appears meaningful in supporting the performance of a female CEO (Cook & Glass, 2015). Overall, the findings on gender composition on boards are mixed. Although the requisite number of female directors

varies across studies, there are several indications that including women on boards has spillover effects in firms. However, some literature has shown how other demographic similarities between board members can exceed gender in importance. These factors are briefly highlighted in the following section.

2.3.1.1. Board member characteristics beyond gender

The literature also offers indications that gender may not be the most dominant factor in gaining influence on boards. Although demographic similarity plays a central role in board dynamics, similarities can be found in other demographic dimensions than gender. Indeed, scholars have found evidence of other director characteristics that may offset the effect of gender in director and executive appointments. For instance, Zhu, Shen, and Hillman (2014) argue that a woman is more likely to be appointed as a director the more demographic similarities they have with the other members of the board. These demographic factors may include the same ethnicity, educational background, or expertise in the same functional area (Zhu et al., 2014). Zhu, Shen, and Hillman (2014) draw on the recategorization theory, which aims to address the negative impact of social categorization of group members on the division into in-group and out-group members (Gaerner et al., 1989). The authors found that increasing diversity in one dimensions, gender in this case, may result in decreased diversity in other demographic dimensions, which may reduce the overall benefit of a diverse board. Nevertheless, gender and ethnicity are found to have a more substancial effects in the recategorization process, showing that if a candindate belongs to a minority in these dimensions, they need to posess more similarities in other dimensions (Zhu et al., 2014). This illustrates how seeking diverstiy contradicts the basic tendency to seek similarity.

However, gender can also be seen as an asset in leadership particularly when it is treated as behavior rather than biology. The following subsection elaborates on more contemporary views on gender in leadership, which may benefit women in the succession process.

2.3.1.2. Gender traits as behavioral characteristics

The literature shows that gender remains a differentiating factor in business, particularly at the top of the corporate hierarchy. However, as several theories explain the differences of biological gender in the organization, others have treated gender as a behavioral measure. In recent literature, the study of gender effects has shifted from focusing on biological sex to a more nuanced view of gender as a collection of traits. Due to the change in societal and managerial norms, a shift in this traditional view has emerged in the literature, where gender in CEO succession is increasingly viewed as a balance of masculine and feminine traits (Adamson, 2016). Byrne et al. (2019) contribute to this view by demonstrating how gender in the workplace may be a product of social construction rather than the traditional assumption that people "bring gender to their jobs". This refers to CEOs adopting femininities and masculinities in different tasks as CEO, which may have a significant impact on the succession experience (Byrne et al., 2019) The authors view gender traits as non-binary and a result of action rather than biological sex, which challenges the stereotypical approach to gender in the workplace.

Scholars have also found positive implications for femininity in CEO succession and legitimacy (Byrne et al., 2019). In fact, the term relational femininity is used to describe an empathetic approach to leadership that emphasizes collective goals and sharing power. Aspects like fostering a problem-solving culture and investing time in gaining employee trust are associated to relational femininity and have been found to increase the legitimacy of a CEO among a variety of stakeholders (Byrne et al., 2019). Although the term is derived from characteristics traditionally associated with women, relational femininity is exercised by both male and female CEOs (Byrne et al., 2019). Furthermore, Byrne et al. (2019) introduce the concept of individualized femininity, which refers to women CEOs actively distancing themselves from their gender and reinforcing the idea of gender neutrality in performance, which is found to further increase their legitimacy. Fostering individualized femininity brings merit and competence into the center while potentially shifting focus away from gender stereotypes.

The contributions of Adamson (2016) and Byrne et al. (2019) are significant as they demonstrate a new approach to exploring gender in leadership. On the one hand, understanding that both genders can exhibit masculine and feminine characteristics can neutralize attituded towards leaders of different genders. On the other hand, highlighting the positive aspects of femininity can increase the odds of female inclusion in top leadership. Female inclusion has, indeed, been a central theme in the literature on board composition. Moving forward, the focus of this study is placed on how gender factors into CEO succession.

2.3.2. Gender and CEO succession

As discussed previously, the primary task of the board of directors is to appoint the CEO of the firm. As a central topic in corporate governance, a vast amount of literature has developed around CEO succession. One of the central theories explaining the succession process is the institutional theory of action (March & Olsen, 1989)., which Ocasio (1999) applied to CEO succession.

Ocasio (1999) leveraged institutional theory of action to explain how board decisions in the succession process are made according to formal and informal rules. In respect to corporate governance and CEO succession Ocasio (1999) highlights three dimensions of the theory. Firstly, it grounds organizational decisions in appropriate rules. Secondly, it emphasizes the role of history in creating the rules and processes behind organizational behavior. Thirdly, the theory underscores cognitive factors and organizational politics in the creation of rules. These dimensions partly explain why the demographic profile of corporate leadership has remained similar for decades. Moreover, Ocasio (1999) makes the important distinction between rational decision making and bounded rationality, which may coexist in the succession process. Although directors aspire to make informed and transparent decisions, their behavior is inevitably influenced by personal biases. Therefore, implicit discrimination may occur even when a strict protocol is followed.

From an agency perspective, CEO succession is seen as a tool for adjusting the course of managerial actions to follow the interests of the board (Ocasio, 1999). Concurrently, it can potentially have disruptive implications on organizational activity. As ambiguity and rapid change have become an integral part of business and strategic planning, the literature has also begun to focus on themes like role of succession planning and performance implications (Cvijanovic et al., 2020; Tao & Zhao, 2018) and the costs and benefits of inside and outside successions (Georgakakis & Ruigrok, 2016). To support a smooth transition process, Tao and Zhao (2018) suggest that a "relay succession" reduces volatility and enhances post-succession performance. This refers to the successor CEO being trained before appointment by the CEO in office (Tao & Zhao, 2018). The relay period is measured by the duration in years that the incoming CEO has been coached before entering the position, illustrating that succession plans are often confirmed years prior to the exit of the CEO predecessor (Tao & Zhao, 2018). Due to the longer relay period in inside appointments, the authors argue that inside appointments produce superior performance outcomes.

On the other hand, Georgakakis and Ruigrok (2016) argue that causal relationships cannot be assumed directly between outside appointment and negative or positive organizational performance. The authors demonstrate that outside successions involve both challenges and benefits that may contribute to disruption or adaptation depending on the context. Surprisingly, Georgakakis and Ruigrok (2016) support the argument that outsider CEOs with similar demographic profiles to their predecessors yield better performance results post-succession. The authors argue that demographically similar successors are able to better integrate with the organization, which improves knowledge transfer and promotes positive financial performance. This may explain the reasoning for companies to maintain status quo in CEO succession and appoint male candidates after male CEOs.

The literature also discusses the role of interim CEO succession, which often follows sudden CEO departures and thus differs from traditional succession modelling (Liang et al., 2012). As gender is defined equally important in interim succession in this study, a brief exploration into the literature is appropriate. While a planned succession is proven

to ensure the continuation of smooth operation and thereby enhance firm performance (Tao & Zhao, 2018), many firms still lack a succession plan at the time of CEO departure (Liang et al., 2012). To reduce ambiguity, political behavior and conflict caused by the absence of executive authority, companies have a common practice of appointing a trusted person as CEO until the successor is announced (Liang et al., 2012). Liang et al. (2018) conclude that interim CEOs are usually appointed from the board or executive team, and seldom from outside the company. Because the interim CEO is usually a trusted insider, this could potentially give female directors and non-CEO executives critical exposure to the CEO tasks. Liang et al. (2018) further found that well-performing interim CEOs are more likely to be offered a permanent position, while failure to perform increases the odds of the interim CEO leaving their organization. Thus, assuming an interim CEO position in a turbulent time is a high-risk career move, which may however give the chance for female directors and executives to prove their competence and attain permanent CEO positions.

Overall, while previous studies have concentrated on the succession process from the perspective of financial performance, or the inside-outside appointment standpoint, not much literature has discussed gender as a systematic variable in the successor evaluation. Due to the unpredictable nature of CEO succession, scholars have emphasized the creation of rule-based frameworks aiming at minimizing uncertainty (Ocasio, 1999). Because of the ambiguity associated with leadership change, companies may perceive a higher risk in appointing a CEO with a significantly different demographic profile than what the company is accustomed to. In fact, the key theories in gender and CEO succession are built around the assumption of demographic similarity between the CEO and board members (Elsaid & Ursel, 2011). This favoritism towards similar candidates is explained by social identity theory (Elsaid & Ursel, 2011) or homophily (Byrne et al., 2019). Based on this theory, if the prototypical group member is a middle-aged man, it is likely that the appointed CEO also fits this demographical description (Elsaid & Ursel, 2011). These findings are in line with the discrimination literature presented earlier in this chapter. Due to the uncertainty associated with CEO change, risk aversion is central in the succession process. On the other hand, women have been found to produce better

long-term results because they are more risk averse. Therefore, although selecting a CEO successor of the opposite gender may be risky in the short term, it can offset the risk in the long term.

As the above literature review shows, gender has not been considered a central factor in succession modelling. The contribution by Elsaid and Ursel (2011, p. 14) "has been to add gender variables to models of CEO succession", which indicates that gender may not have been a central component in succession modeling in the past. Thus, further research is needed on gender in the CEO succession process. However, based on what is known on female CEO succession, the executive level in the firm constitutes a good pool of potential candidates. Thus, it could be assumed that the gender composition in executive teams may also factor into the succession process. The following section briefly examines previous research conducted particularly on the role of the executive team in CEO succession.

2.3.2.1. Executive teams and female CEO succession

While the roles and selection methods of the CEO and the board of directors are defined by Finnish law, the executive team is a voluntary entity which is not regulated. In Finland, executive team members can be chosen by the board or the CEO, but most often this is done in cooperation. Looking at female CEO appointment, some authors recognize the importance of the executive team (Matsa & Miller, 2011; Milkman & McGinn, 2012). While the entity liable for appointing the CEO is the corporate board, the executive team composition may signal critical characteristics of the firm which may be central for the investigation. Firstly, increasing the number of executives of the minority gender is found to enable career advancement for other gender minorities within an organization (Milkman & McGinn, 2012). In addition, having more women on the executive team signals that the company accepts and encourages female leadership. A company culture that fosters equal managerial opportunities is likely to attract more potential female CEO

candidates (You, 2019). Hence, the likelihood of appointing a female CEO could be assumed to increase based on the number of women on the executive team.

Milkman and McGinn (2012) explain the importance of the executive team in creating gender spillovers by drawing upon social identification and the demographic similarity effect. These theories have been discussed previously in the context of directors and CEO appointment. The authors argue that women in superior positions enhance the career mobility of junior professionals. Consequently, more women are promoted and become part of a wider pool of candidates for top level positions. In line with this, Matsa and Miller (2011) allege that the increase in female CEOs can be the result of companies having a larger supply of woman managers. Therefore, increasing the number of women at the executive level should be a significant driver of wider gender spillover effects. Firstly, boards that have seen the positive contribution and fit of female executives are more prone to appoint a female as CEO. Secondly, a larger number of female executives indicate that the company understands the added value of diversity and female advancement. Thirdly, an increased number of female executives provides a larger pool of potential CEO candidates with relevant experience. However, the direct or indirect effect of the executive team composition on the selection of female CEOs remains relatively underexplored in the literature.

In terms of the succession process, the board of directors has received more attention. One central aim of this thesis is to investigate how board gender composition affects female CEO succession. Therefore, it is critical to understand how the topic is treated in the existing literature, which is explored in the final section of this chapter.

2.3.2.2. Board composition and female CEO succession

The literature suggests that increasing the number of female directors has a positive effect on the likelihood of appointing a female CEO. Matsa and Miller (2011) were among the first to investigate the causal relationship between increasing the number of female

directors and the board appointing a female CEO. The authors found that increasing the proportion of female directors by 10 percent would grow the probability of a female CEO being appointed by 0.2-0.4 percentage points. Based on this finding, the Matsa and Miller (2011) developed the gender spillover theory, which suggests that female directors impact the appointment of female executives. Although the effect seems minor, it provides a solid foundation for the argument that increasing female representation in the corporate upper echelons has positive spillover effects to other executive positions. Elsaid and Ursel (2011) also investigated the effect of board gender composition on female CEO appointment. The authors confirmed that the number of female directors has a positive effect on the likelihood of appointing a female CEO.

Building upon the findings of Matsa and Miller (2011) a few scholars have focused on investigating the number that is required to increase the influence of female directors in CEO succession decisions. However, the literature seems to suggest that numbers alone are rarely sufficient in predicting the likelihood of female CEO succession. For instance, Gupta and Raman (2019) discovered that a larger number of female directors increases the likelihood of female CEO appointment only when the CEO comes from within the board. This indicates that rather than gaining more influence, a larger number of female directors contributes to a larger pool of potential candidates (Gupta & Raman, 2017). Similar findings were produced by Elsaid and Ursel (2011) who discovered that appointing successors from outside the firm is unlikely to increase the likelihood that the appointed CEO is a woman. You (2019), on the other hand, found that the odds of female CEO succession increased significantly when a critical mass of women was present on the board, in addition to the firm exhibiting a high degree of female friendliness. This was measured by the gender pay gap, the number of female executives, and the linkages of male directors to companies with female CEOs. Therefore, it seems that board gender composition may have a central role in female CEO succession, however, the effect is often strengthened by other variables.

However, some research also indicates that female directors can exercise high degrees of influence and use their networks in CEO succession without the coalition of a group of

women. Cook and Glass (2015) argue that the relative influence of female directors, measured by their links to other boards, has a significant positive effect on appointing a female CEO. This supports the idea that female CEO appointment is connected to the networks possessed by women directors. Liu (2014) contributes to this idea by showing that well-networked female CEO are more likely to be chosen due to their ties to board members. Liu (2014) provides empirical support to the argument that increasing the number of female directors to three or more increases the diversity of considered external candidates through their social networks. However, Cook and Glass (2015) only find what they refer to as a "marginal positive relationship" between the number of females on boards and female CEO appointment. To determine the significance, these authors use $p>0.10$, which is not a generally accepted significance level. Thus, the reliability of this finding can be questioned.

On a general level, research on board composition and CEO succession suggests that female directors are linked to the selection of female CEOs. In addition, some findings support the hypothesis that female executives increase the likelihood of female CEO appointment. However, a closer look at the literature reveals several shortcomings, which render the formulation of an overarching theoretical framework challenging. First, the findings are mixed regarding the impact of critical mass and the relative influence of networked female directors. It remains unclear whether there may be a certain threshold that significantly increases female influence, or whether influence is always relative. Thus, it is difficult to build a predictive model on how board characteristics influence CEO gender. Comprehensive research has been conducted on the macro, meso and micro influences that shape career advancement opportunities for women. Yet, relatively little research has been conducted on the effect of board gender composition on CEO succession to date.

Furthermore, most studies have focused on Fortune companies in the United States, whereas other markets have received less attention in the literature (Table 3). Thus, further insights are called for from different national contexts. As a forerunner in political representation of women and a generally highly egalitarian country, Finland is a

theoretically interesting country of focus. Several public authorities and organizations have conducted investigations into gender equality in the upper echelons of corporations in Finland (Halttula & Saikkonen, 2020; Teräsaho & Kupiainen, 2015; Turunen & Linnainmaa, 2018). These reports have repeatedly shown that although Finland performs amongst the top countries in gender equality on boards of directors, an alarming lack of females still exists in top executive positions (Halttula & Saikkonen, 2020). While gender diversity reports on Finnish companies provide insights into the numerical representation of women in leadership, there is still limited academic research on this topic.

Furthermore, the literature offers little empirical evidence on the role of the executive team in CEO succession. While little research has been conducted on this relationship, female executives have been linked to wider gender spillover effects in firms (Milkman & McGinn, 2012).

To sum up, this study aims to contribute to these gaps by 1) investigating the effect of increasing the numerical representation of women directors, 2) focusing on publicly traded companies in Finland and 3) including the number of female executives into the predictive model of female CEO appointment.

Table 3 Summary of previous research

Topic	Author (Year)	Main Findings	Country
Women on Boards	Gabaldon et al. (2015)	Literature review found that little scientific evidence is found explaining country differences in allowing women to reach board positions	International
	Grosvold & Brammer (2011)	Board diversity is usually best enhanced by cultural and legal systems.	International
	Iannotta, Gatti & Huse (2015)	Board gender quotas are not sufficient for increasing female representation on boards	Italy

	Tyrowicz, Terjesen & Mazurek (2020)	Leadership gender diversity differs between countries and the connection to cultural and equality institutions is mixed.	International
Tokenism	Kanter (1977)	Solo women on boards are likely to have less ability to influence board decisions	USA
Critical mass	Konrad, Kramer & Erkut (2008)	The degree of influence for women increases significantly when they reach a critical mass of three on boards.	USA
	Lafuente & Vaillant (2019)	Instead of critical mass, gender balance yields superior results in the impact of female directors.	Costa Rica
	Torchia, Calabrò, & Huse (2011)	Attaining the critical mass of three female directors has a significant positive relationship with firm innovativeness	Norway
CEO succession and gender	Byrne, Radu-Lefebvre, Fattoum & Balachandra (2019)	Different ways of demonstrating gender in behavior can legitimize female CEO succession	USA
	Georgakakis & Ruigrok (2016)	Appointing a demographically similar CEOs to incumbents leads to better performance	USA
	Keloharju, Knüpfer & Tåg (2016)	Female and male CEO candidates have unequal opportunity to be appointed as CEO, which is not explained by personal characteristics	Sweden
Board composition and female	Elsaid & Ursel (2011)	Appointed CEO is more likely to be female the more females there are on the board of directors	USA

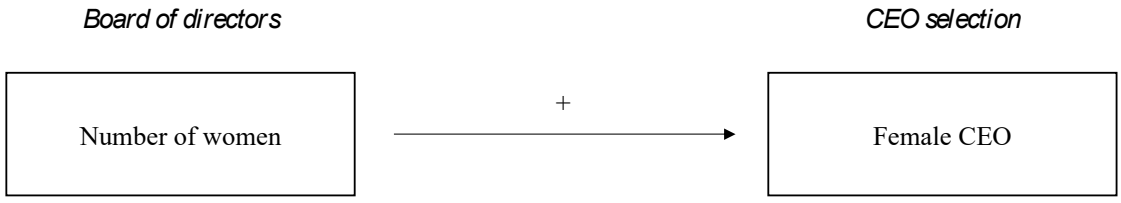
CEO succession			
	Gupta & Raman (2017)	The likelihood of female CEO appointment increases with the number of female directors, but only when the CEO is appointed from the board	USA
	Matsa & Miller (2011)	The share of females on board increases the likelihood of women being appointed as CEO	USA
	You (2019)	the likelihood of female CEO appointment increases significantly when a board has a critical mass of at least three female directors.	USA
	Cook & Glass (2015)	A marginally significant positive relationship ($p>0.10$) exists between board diversity and the likelihood of female CEO appointment.	USA

2.4. Hypothesis formulation and theoretical framework

Based on the comprehensive review of the relevant literature, three hypotheses are formulated. As indicated by the key literature on board gender composition and CEO succession, the assumption is made that increasing female representation within the non-CEO top leadership increases the likelihood of appointing a female CEO (Matsa & Miller, 2011; Elsaid & Ursel, 2011). This fundamental assumption leads to the formulation of the first hypothesis (Figure 1):

H1: The likelihood of appointing a female CEO increases when there are more female directors on the board of directors.

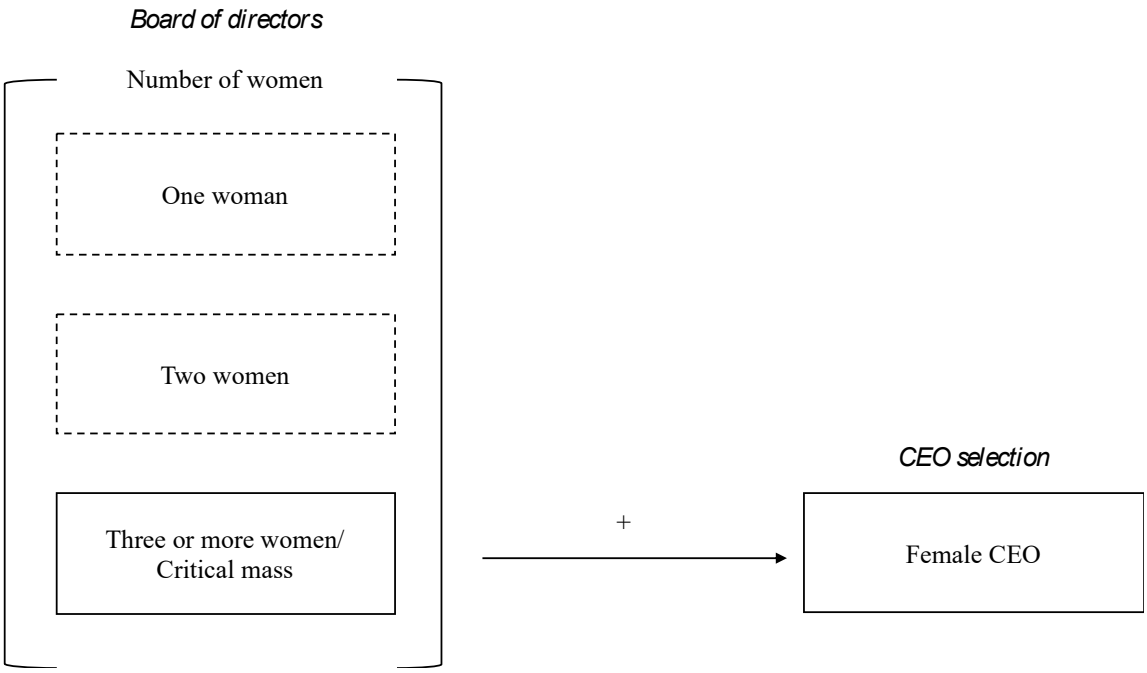
Figure 1 Illustration of Hypothesis 1



The second hypothesis is formulated based on the stream of literature that draws upon the critical mass theory (You, 2019; Kanter, 1977; Torchia et al., 2011). According to the critical mass theory, once the numerical representation of women directors reaches a certain threshold, the minority group gains more influence in decision making (Kanter, 1977). Empirical findings show that the critical mass needed to incite change on corporate boards is three (You, 2019). Thus, the second hypothesis is formulated as follows (Figure 2):

H2: The likelihood of appointing a female CEO increases considerably once the critical mass of three or more female directors is achieved.

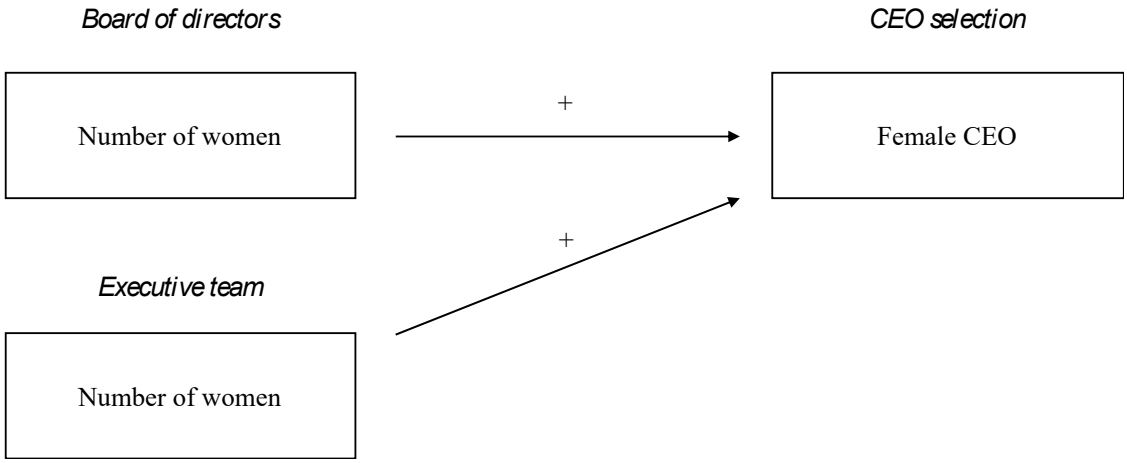
Figure 2 Illustration of Hypothesis 2



The literature seems to offer mixed findings on the relationship between board gender composition and CEO succession, which leads to the assumption that there are more explanatory variables in the equation than accounted for. For instance, You (2019) found that female friendliness in the firm was an indicator that strengthened the likelihood of female CEO appointment. This was measured by the gender pay gap, the number of female executives, and the linkages of male directors to companies with female CEOs. Furthermore, Gupta and Raman (2017) argue that the reason that the likelihood of female CEO succession increases with more female directors is that it provides more female CEO candidates. Matsa and Miller (2011) also highlighted the importance of managers in increasing the supply for female directors. Drawing upon the idea that an increased pool of candidates increases the chances of a female being chosen as CEO, the assumption can be made that a larger number of female executives would also have an impact on the odds of female CEO succession. Grounded in this assumption, the third hypothesis is formulated as follows:

H3: The likelihood of appointing a female CEO increases if there are more females in the top executive team and board of directors.

Figure 3 Illustration of Hypothesis 3



These three hypotheses present the theoretical framework that guides this study. Using a deductive approach, data were collected and tested to verify or reject the hypotheses. The following chapter highlights the methodological decisions and procedures that lead to the findings.

3. RESEARCH DESIGN AND METHODS

The purpose of this thesis is to investigate how the likelihood of female CEO succession is affected by the gender composition of the board of directors and executive teams in companies listed on the Helsinki Stock Exchange. This study aims to test the gender spillover theory, that indicates that increasing the number of females in top corporate positions has a positive effect on female CEO succession (Matsa & Miller, 2011). This chapter is divided into three parts. The first describes the research approach, and the fundamental considerations of philosophical standpoints and research design. The second provides an in-depth description of the data collection procedures. The third section focuses on the analytical procedures, which is followed by a brief evaluation of the study.

3.1. Research approach

First, to understand the optimal methodological approach of this study, a careful consideration of the philosophical underpinnings shaping the study are in place (Antwi & Hamza, 2015). This entails defining the underlying ontological standpoints, which concerns our understanding of nature and reality, and the epistemological positioning, which refers to the understanding of how knowledge is produced (Creswell, 2015). The purpose of this study is formulated with the assumption that reality is objective and can be quantified using scientific methods. The aim is to understand what is true and false by empirical testing. In terms of the ontological underpinnings, this follows a positivist paradigm. According to the positivist worldview, human behavior can be explained by systematizing processes and relationships through reason and observation (Antwi & Hamza, 2015). While understanding that human dynamics are always more complex and context driven, the philosophical assumption entails that general trends in human behavior can still be identified using quantitative measures.

From an epistemological standpoint, the positivist approach perceives science to be a systematic method to identify causal relationships and patterns in human behavior

(Neuman, 2003). In terms of research design, a positivist approach aims at using objective methods to model how variables interact with one another in a quantifiable manner to produce an accurate approximation of reality (Antwi & Hamza, 2015). A central assumption in the positivist paradigm is that the researcher is independent from the subject of research, thus mitigating the effect of personal views and biases on the research (Sukamolson, 2007). With these underlying assumptions, the positivist paradigm uses the dimensions of validity, reliability, objectivity, precision and generalizability to evaluate the quality of studies (Sukamolson, 2007). While maximizing objectivity is a main concern in developing the methodology for this study, the notion that results may be influenced by personal biases and current environmental forces cannot be ignored (Sukamolson, 2007).

The quantitative design is further defined keeping in mind the philosophical considerations. The research relies on secondary data, due to which it follows a nonexperimental design (Creswell, 2015). More specifically, the aim is to understand causal relationships between females on boards and executive teams and CEO succession. Thus, the nonexperimental quantitative research follows a causal-comparative research design (Creswell, 2015). In other words, it compares variables to find a cause for past events. The binary outcome, gender, makes testing the relationship between variables analytically more complex. The most appropriate method for testing the relationship between variables of this nature is binary logistic regression. Binary logistic regression is used to model the likelihood of the outcome being male or female based on the independent variables. Thus, the model identifies whether the predictors affect the probability of either outcome occurring.

Both the research design and philosophical views influence the specific research methods employed in this thesis. The consideration of methods includes data collection, data analysis, interpretation and validation (Creswell, 2015). These aspects are discussed respectively in this chapter. In conjunction with data collection procedures, the variables and sampling decisions are described in detail. Before proceeding to the data collection

phase, the aims of the study are clarified by a brief description of the unit of analysis and the unit of observation.

3.1.1. Definition of the unit of analysis and unit of observation

Before proceeding further with the research design, a brief assessment of the unit of analysis and the unit of observation is in place. The definitions of the unit of analysis and the unit of observation are visualized in **Virhe. Viitteen lähdettä ei löytynyt.**. Unit of analysis is defined as the entity that is intended to be explained through the research (DeCarlo, 2019). In this case, the hypotheses aim to investigate how the gender composition of the board of directors and the executive team affect the likelihood of female CEO appointment. Thereby, the testing aims to identify what kind of gender composition is needed at the top levels of firms to appoint more female CEOs. Thus, the unit of analysis is on group level, in particular, the board of directors and the executive teams. On the other hand, the unit of observation is the entity which is focused on to derive insights about the unit of analysis (DeCarlo, 2019). The unit of observation is the individual, specifically counting female vs male directors.

3.2. Data Collection

Because the objective of this study is to examine past succession events, secondary data collection is the preferred procedure for this study. The descriptions of each phase of data collections and the definition of variables are detailed below.

3.2.1. Sources of data

As stated before, secondary data analysis is considered an appropriate approach for this study. Because of the robust disclosure obligation for listed companies in Finland, the

needed data are found from the annual reports of sample companies and publicly accessible online. According to the Finnish Financial Supervisory Authority (FIN-FSA), all companies whose securities are traded on the Helsinki Stock Exchange must provide timely, accurate and robust information regarding performance and governance based on the disclosure obligation regulated by the Securities Market Act, and the Market Abuse Regulation (Financial Supervisory Authority, 2019). The periodic disclosure obligation requires annual reports to be kept accessible online for at minimum 10 years after publishing. Therefore, the data used in this study were collected from the annual reports of companies listed on the Helsinki Stock Exchange.

Before using the data, the quality and reliability of the data source was evaluated. Source criticism is particularly important in research because it can directly affect the validity of the study (Vilkka, 2007). Some fundamental questions in the evaluation are who produced and published the content and for what purpose (Vilkka, 2007). Because the disclosure obligation and the auditing requirements of annual reports, the information can be assumed accurate. Furthermore, recorded variables included objective measures on demographic characteristics, firm performance indicators, and board sizes, due to which they can be assumed unbiased.

3.2.2. Collection procedures

The data were collected directly and manually from the annual reports of each company listed on the Helsinki Stock exchange. Thus, the study can be considered a population study. This collection procedure is explained in detail first, followed by a thorough description of the specific variables chosen for analysis. First, the list of companies was extracted from the NASDAQ site on February 20th, 2020, after which a search engine was used to find the CEO and the year in which they were appointed. The gender of the CEO on directors was defined based on names, pictures or the prefix in the section of the annual report introducing the board of directors. The date of announcement was mostly determined from press releases and in some cases was stated in the annual report. For

events that occurred in the year 2019 for which annual reports had yet to be published, the composition of the board was recorded from the company website, taking into account the starting date of listed directors and executives. Hence, there may be slight discrepancies in case directors who were active in 2019 have ended their terms and are thus currently not listed on the website. There were large differences in the method of reporting financial and corporate governance information, where some were stated altogether in the annual report and others separated into a financial statement and corporate governance statement.

The number of female directors was coded at the time of the appointment announcement, disregarding cases, for instance where a female director was appointed during the same month that the new CEO took office. Moreover, cases in which female directors had left the board one or more months before the appointment were excluded. The average age of directors was calculated based on the birth years listed on the reports. The ages were thus calculated to reflect the year that the appointment was announced. Furthermore, the number of female executives was recorded from the year previous to the succession announcement, in order to capture if causal relationship occurred. Furthermore, whether the appointed CEO was an internal or external hire was determined based on their listed previous work experience.

Another consideration was the language of reports. According to the reporting principles for companies listed on the Helsinki Stock Exchange (NADAQ OMX, 2014), public releases and reporting must be conducted in Finnish or Swedish, unless a specific exemption is requested and granted for reporting in English. Only foreign companies are currently automatically exempt from this practice. Due to this, data were collected from reports in all three languages and the numerical values were recorded in an excel sheet.

3.2.3. The sample

The research question aims to analyze historical events in order to formulate a model to predict future CEO succession events. The population that is studied includes all companies listed on the Helsinki Stock Exchange, which at the time of retrieval (February 18th, 2020) consisted of 129 companies. Due to the small size of the population, all companies for which the defined data were available were included in the study. From the defined set of companies, all CEO succession events which were announced within the years 2015-2019 were included in the data set. This included CEOs appointed for an indeterminate duration as well as interim CEOs elected for the period before the successor took office. To identify if there were significant differences between the two types of successions, interim CEO succession was also controlled for with a dummy variable. The overall sample size of succession events in the period 2015-2019 amounted to 127, occurring in a total of 73 companies. Prior to analysis, the data set was cleaned from missing variables, after which the working data set consisted of 115 entries. Although the reported number of female CEOs in 2019 was 11, there were 15 succession events during the sample period. This is explained by two female CEOs in the sample being appointed only for an interim period and two being already replaced by men.

3.2.4. Variables

The purpose of this thesis is to investigate how the likelihood of female CEO succession is affected by the gender composition of the board of directors and executive teams in companies listed on the Helsinki Stock Exchange. In order to test the constructed hypotheses, the key variables are defined (Creswell, 2015). All variables are described in Table 4, along with their codes, measurement and data type.

The dependent variable in the binary logistic regression is the gender of the appointed CEO, coded as a dummy variable where females are coded as “1” and males as “0”. Because the regression is conducted in three stages, three regression coefficients are

tested separately. For the first hypothesis, the number of female directors is used as an ordinal variable. The second hypothesis tests the effect of critical mass on the board of directors, the independent variable is the number of female directors, which is coded as "1" for one female directors, "2" for two female directors and "3" for three or more female directors. Cases with no females on the board of directors is coded as "0". The third independent variable represents the number of females on the executive team prior to the year of the CEO change announcement. This is coded as the number of female directors on an ordinal scale.

Table 4 Model variables

Variable Type	**Dependent Variable**	**Description**	**Measurement**	**Data type**
Dependent variable	CEOGEN	Gender of appointed CEO, based on names, pictures or the prefix stated in annual report	1=female, 0=male	Dichotomous
Independent Variables	FEMDIR	The overall number of female directors at the time of CEO appointment.	Number of female directors	Continuous
	MASS	The critical mass in categories.	0= no female directors 1= one female director 2= two female directors 3= three or more female directors	Categorical
	FEMEX	The number of female executives in the year prior to CEO appointment.	Number of female executives	Continuous

Controls	BOARDSIZE	Size of the board of directors	Number of board members	Continuous
	EXSIZE	Size of executive team	Number of executive team members	Continuous
	DIRAGE	Average age of directors	Average of all directors	Continuous
	MALEIND FEMIND EQUALIND	Gender balance in a given industry	Dummy	Dichotomous
	INCOMP	Whether the CEO if from the company	Dummy based on previous work experience on annual report	Dichotomous
	INBOARD	Whether the CEO is from the board	Dummy Dummy based on previous work experience on annual report	Dichotomous
	INTERIM	Whether the CEO was an interim appointment	Dummy based on information on annual report	Dichotomous
	ROE	Performance, net income/shareholder's equity in the year of the appointment.	ROE from annual report of CEO appointment year	Continuous

	LARGECAP MIDCAP SMALLCAP	Size of the firm	Dummy, based on NASDAQ classification	Dichotomous
	YEAR 2015, 2016, 2017, 2018, 2019	Year of appointment	Dummy	Dichotomous

To establish the context in which the null hypothesis may or may not be rejected, selecting relevant control variables is critical. These control factors have been selected based on theoretical assumptions found from the literature. Control variables are chosen to illustrate other conditions related to board composition, firm performance or industry factors, which may have an effect on the CEO succession process. Individual-level control factors for the selected CEO included whether they had previous work experience in the firm or not, and whether they were full-time or interim appointments. Further research is suggested to include individual-level variables such as nationality, which was not disclosed in all data sources and thereby excluded from the study. The implementation of selected control variables serves two objectives – it reduces error terms which may occur by a simple uncontrolled regression analysis and eliminates potential alternative explanations for the phenomenon (Becker, 2005). The control variables used in this study are summarized in Table 3.

Firstly, when looking at both critical mass and the total number of female directors, controlling for board size is important for multiple reasons. First, controlling for board size shows if the effects are relative to board size, or if the count of women is a sufficient standalone measure. In other words, if a significant effect is found, it may indicate that the female influence is gained by numbers when certain size conditions are met. Otherwise, the effect between female directors and female CEO can be assumed to occur regardless of the number of their male counterparts. Second, corporate governance literature accounts board size as a critical measure of board composition (Lipton & Lorsch, 1992). Scholars find that increasing the size of the board has a negative impact on board effectiveness (Lipton & Lorsch, 1992). Thus, it may be assumed that increasing

the number of females may be less effective if it increases the board size simultaneously. In addition, the size of the top executive team is controlled for.

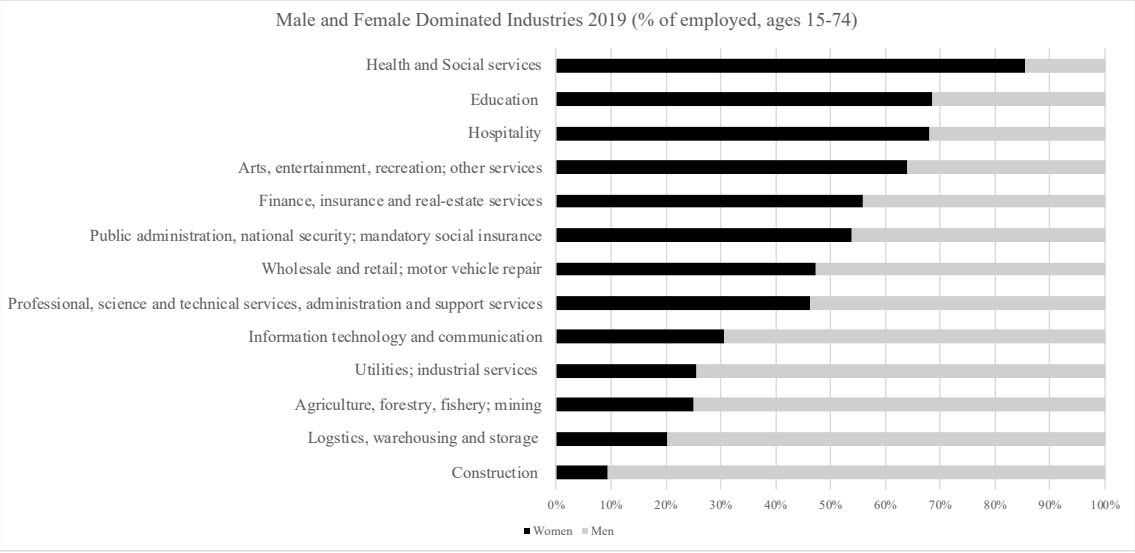
Other compositional measures are considered to be the ratio of independent directors and director age (Muchemwa et al., 2016). Because the majority of board members are mandated to obtain an independent status (Securities Market Association, 2015), and data on director independence were not comprehensively available, board independence is not included in the data set as a control variable. However, director age is controlled for to show whether age has an effect on the equation. Hence, the overall average age of directors is recorded. As stated by You (2019), the reasoning behind including a control for director age is that because younger directors are more aware of equality issues, they are more likely to favor female candidates compared to older directors.

Thirdly, the industry receptiveness towards females may be a critical factor to control for as it may appear significant in the selection of a female CEO (You, 2019). Consequently, the receptiveness towards females on an industry level is included in the control variables. For example, Matsa and Miller (2011) argue that half of the correlation between the number of female directors and appointed CEOs can be explained by accounting for industry differences. Thus, three dummy variables were included for female dominated, male dominated and gender equal industries. The division was based on data retrieved from the labor force investigation conducted by Statistics Finland (2020), seen in Figure 5, where N=2558. According to Statistics Finland (2020), industries with 40-60% men or women are considered equal industries, which was used as benchmark for the dummy variables. Industries where more than 60% were women were classified as female dominated, and respectively those with over 60% men were classified as male dominated. The companies were matched with industries based on the Industry Classification Benchmark (ICB) used to categorize companies in the Helsinki Stock Exchange (Finnish Foundation for Share Promotion, 2012).

Fourthly, as the literature offered some indication that internal and external hiring would have a significant effect on female CEO selection (Gupta & Raman, 2014), the origin of

the selected CEO became a critical variable to control for. Whether the CEO comes within the company will be coded as a dummy variable where "1" represents CEOs that come from within the company and "0" CEOs that are appointed from external candidates. This information was retrieved from the description of the CEOs previous work experience on the annual report. In the coding phase, two cases occurred which required specifying the definition of an internal hire to someone who has been employed by the company at some point in the past despite having worked elsewhere directly prior to appointment as CEO. In addition, the distinction of whether internal hires come from within the board itself is to be controlled for, to identify whether the internal hires tend to result from internal upward movement or the increase in potential candidates within the board (Gupta & Raman, 2014).

Figure 4 Gender representation Industry breakdown 2019



(Statistics Finland, 2020)

Fifth, a dummy variable was included to show if the appointment was for an interim CEO for the period until the new CEO was found or took office. As seen in the literature, the interim CEO may play a significant role in the succession process (Liang et al., 2012; Tao & Zhao, 2018), and it may give women an opportunity to gain exposure and experience

to the work of the CEO. In the data set, a total of 22 recorded events were interim CEO successions, of which 2 were female.

In addition, two performance indicators are also included to control for firm characteristics. ROE (Return on Equity) is a commonly used measure of performance in academic research (Topak, 2011). Following the example of You (2019), ROE is chosen for this study to indicate the performance of the company in the year of CEO succession. In addition, a dummy variable is included to control for the size of the company. Firm size is divided into three categories, Small Cap, Mid Cap and Large Cap, based on the classification on NASDAQ. Several investigations use this division when reporting about the trends in gender equality in stock listed firms. Furthermore, there are noticeable differences in CEO, executive and director appointment trends depending on firm size. Thus, controlling for firm size in these three categories is critical, to identify if firm size effects the examined relationship. Lastly, to control for environmental changes that may have occurred within specific years, the year of CEO appointment is controlled for using a dummy for each year form 2015-2019.

3.3. Data analysis

The objective of testing is to investigate how the likelihood of appointing a female CEO is associated with having more females on executive teams and boards of directors. Ideally, this would create a model with the capability to accurately predict in which of two categories the event falls based on previous observations. Binary logistic regression is the most common statistical method used for this purpose (Sreejesh et al., 2014). Based on initial observation, the data seems to fit the three basic assumptions that are required for the use of binary logistic regression (Statistics, 2020). First, the dependent variable is dichotomous. Second, the independent variables for all tests are either continuous or categorical. Third, independence of observations exists for the recorded events. However, before proceeding to the regression analysis, further descriptive analysis is conducted on the sample. Firstly, descriptive statistics such as means, ranges, variance and standard

deviations are examined for non-categorical variables. Furthermore, the distribution of events in the sample is illustrated by firm size. Secondly, a correlation matrix on all variables is run to identify associations between variables and the possibility of multicollinearity. Consequently, a Variance Inflation Factors (VIF) analysis is conducted to examine possible multicollinearity between variables. Once the data fit is confirmed, logistic regression is performed using SPSS.

Binary logistic regression is based on the logit transformation of the dependent variable, which creates a continuous logarithmic curve for which the regression model can be developed (Healy, 2006). Because the outcome variable is binary (1=female, 0=male), the outcome variable must be transformed using the logit function:

$$logit(\pi) = \log(\beta_0 + \beta X)$$

The regression model is displayed below (PennState, 2018). In the equation, Y is the binary outcome variable of CEO gender, where $Y_i = 1$ for female and $Y_i = 0$ for male. X_i represent the explanatory variables, which differ between models.

$$\pi = \Pr(Y_i = 1 \mid X_i = x_i) = \frac{\exp(\beta_0 + \beta_1 x_i)}{1 + \exp((\beta_0 + \beta_1 x_i)}$$

There are several differences from a simple regression particularly in the interpretation of the logistic regression output (UCLA, 2020). The two primary values that are interpreted are the B values or log odds, and Exp(B) or odds ratios. Log odds can only be interpreted for their sign and magnitude, meaning whether and to what extent the relationship is increasing or decreasing. For further meaningful interpretation, the log odds are exponentiated into odds ratios. Odds ratios indicate the change in probability that occurs with the unit increase in the predictor, which gives a better estimate of the extent of the relationship. Omnibus Test of Model Coefficients and Hosmer Lemeshow tests are conducted to evaluate the model fit for each of the three models. The following chapter describes the findings from each step, starting from the descriptive statistics. However, before proceeding to the results and findings, an evaluation of the study is

presented, addressing concerns of data quality, ethical consideration and other procedural limitations of this research.

3.4. Evaluation of the study

3.4.1. Data quality

To evaluate the quality of statistical results derived in this analysis, the key dimensions considered are validity and reliability. Reliability refers to the replicability of the study. Reliability measures can be further divided into two areas: external and internal reliability. External reliability means that the test can be generalized beyond this study. Internal reliability refers to the consistency of producing intended results. The reliability of results of logistic regression can be interpreted from the results of the 95% confidence interval (CI), which are presented in the following chapter. Validity on the other hand, refers to the accuracy of the measure in representing what it is intended to measure. For a test to be valid, it must be reliable. In addition, two other general threats for validity are addressed for this study, which include sample size and determining causality.

The first threat for validity of results concerns the size of the sample. In general, larger samples produce more reliable results. The sample included all succession events in Finnish Stock listed companies between 2015-2019 excluding only 12 cases with missing variables. Thus, it can be considered a population study. However, the low number of female CEO succession events (15) created notable challenges. Events Per Variable (EPV) is considered a standard method of evaluating the sufficiency of the sample for binary logistic regression (Harrell Jr, 2001). EVP refers to the number of events for the smaller outcome group relative to the number of estimated regression coefficients (Harrell Jr, 2001). A widely accepted minimal EVP value for performing binary logistic regression is ten, which is true with the single predictor in hypothesis 1. However, the categorial predictor for critical mass in hypothesis 2 contained four categories. In addition, hypothesis three had two predictors, which lowers the EVP. Van Smeden et al.

(2016) and Vittinghoff & McCulloch (2007) disputed the minimum EVP=10 principle showing that reliable results have been produced from EVP> 4. When EVP is low, the maximum likelihood coefficients may be inaccurate, due to which closer attention should be paid to the outcome and the strength of the correlation between the covariates (van Smeden et al., 2016). Based on these findings, the sample can be concluded as sufficient for testing, however, particularly hypothesis 2 and 3 may produce weaker results due to low EVP, which must be acknowledged in interpreting the results.

The second key consideration for validity is capturing longitudinal data (Diggle et al., 2002). This leads to important considerations of the date range and the procedures of data retrieval. From 2012-2014, there was only one female CEO in companies listed on the Helsinki Stock Exchange. Since then, the number has increased to 11 by 2019, constituting 8.9% of all CEOs in these companies. Therefore, the sample was collected on successions that were announced between the years 2015 and 2019. In order to capture longitudinal aspects, company data were collected from the annual report of the year of the succession announcement. To ensure causality of the results, the board composition was recorded from the time of announcement and executive team composition was recorded a year prior. In case companies in which multiple CEO successions had occurred within the sample time frame, all events were recorded. To identify possible year-specific changes in the variables, each year was controlled for using a dummy variable.

3.4.2. Limitations

Because of the sensitivity and complexity of issue of gender reveal some limitations to this study. Firstly, following existing research on female advancement in business, this study makes the binary distinction between male and female candidates. While “gender equality” and “gender diversity” are used in this thesis interchangeably to refer to the balance between men and women for analytical purposes, the wider non-binary definition of gender is acknowledged. Thus, from an ethical, political and societal standpoint, the binary representation of gender is considered a major limitation of this study (Zyphur &

Perides, 2017). Secondly, the research focuses on a macro perspective of gender equality by concentrating on compositional board characteristics in all publicly traded Finnish firms. Thus, the study excludes personal characteristics of CEO candidates which constitute a significant factor in CEO selection. Therefore, the study does not address e.g. the competence of candidates, which poses a major limitation of the study. Furthermore, although the literature review addresses barriers for female advancement, including discriminatory behaviors, the study does not suggest that any of the sample companies specifically practice such behaviors. Instead, the literature review aims to highlight some of the common concepts found by researchers, which may or may not apply to the sample companies. Thus, the results of this analysis are suggested to be taken to highlight general patterns, and further research is needed to determine the causes of these developments.

Secondly, the generalizability and transferability of the results to other contexts is a key issue discussed in the literature. For instance, Gabaldon et al. (2015) argue that little evidence currently exists explaining country differences in gender equality in top leadership. Therefore, because this topic has received little to no attention in the Finnish context, focusing the study on Finnish firms is justified. However, Tyrowicz et al. (2020) find that leadership diversity differs significantly between markets and the impact of institutions is different in each context. Therefore, taking into account the cultural context, the findings may not be generalizable across different countries. However, given that the results pass reliability tests, this study can be generalized in the Finnish context. Thus, they can be helpful in conducting comparative studies in the future.

4. FINDINGS

This chapter presents the findings of the statistical analyses. The chapter begins with the explanation of the key insights derived from basic descriptive statistics. This includes correlation analysis, which illustrates how variables in the model correlate with one another. Furthermore, a multicollinearity test is run to ensure that independent variables are suitable for logistic regression. Finally, the findings from the binary logistic regression are presented for each hypothesis. The interpretation of these results is discussed in the following chapter.

4.1 Descriptive statistics

Several previous investigations capture the development of gender equality in Finnish stock listed firms as an annual snapshot (Turunen & Linnainmaa, 2018; Teräsaho & Kupiainen, 2015; Horttanainen & Kajala, 2020). However, these investigations have focused primarily on the numbers of female directors, executives and CEOs. While these findings have provided important insights into the current equality situation, they have not uncovered in detail the board and executive team composition at the time of CEO appointment. Unlike gender reports by Findix and the Finnish Chamber of Commerce, which focus on all stock listed companies, this research only considers the firms where a succession has occurred each year. Thus, the sample used in this thesis differs slightly from these investigations and particularly the descriptive statistics may not be directly comparable. However, the analysis presents some interesting findings regarding CEO successions, which is described first.

4.1.1. Sample description

First, basic descriptive statistics for all non-categorical variables are displayed in Table 5. This includes the means, standard deviations, variances, and ranges of each variable.

Interestingly enough, while the number of female directors on a board ranges from 0-5, the mean is only 1.65 with relatively small variance (1.11). Similarly, with the range of female executives being 0-6, the mean is 1.51 with variance 1.95. The board size ranges from 3 to 11 members, whereas the executive team size, which is not dictated by law, ranges from 1 to 14 members. Director average age varies from 38.5 to 64.5. However, the mean, median and mode are all above 50 years. Many past investigations have further divided these findings by firm size, which brings more insight into the notable differences in all variables between firms of different magnitude. This is further illustrated with data displays (Section 3.3.3).

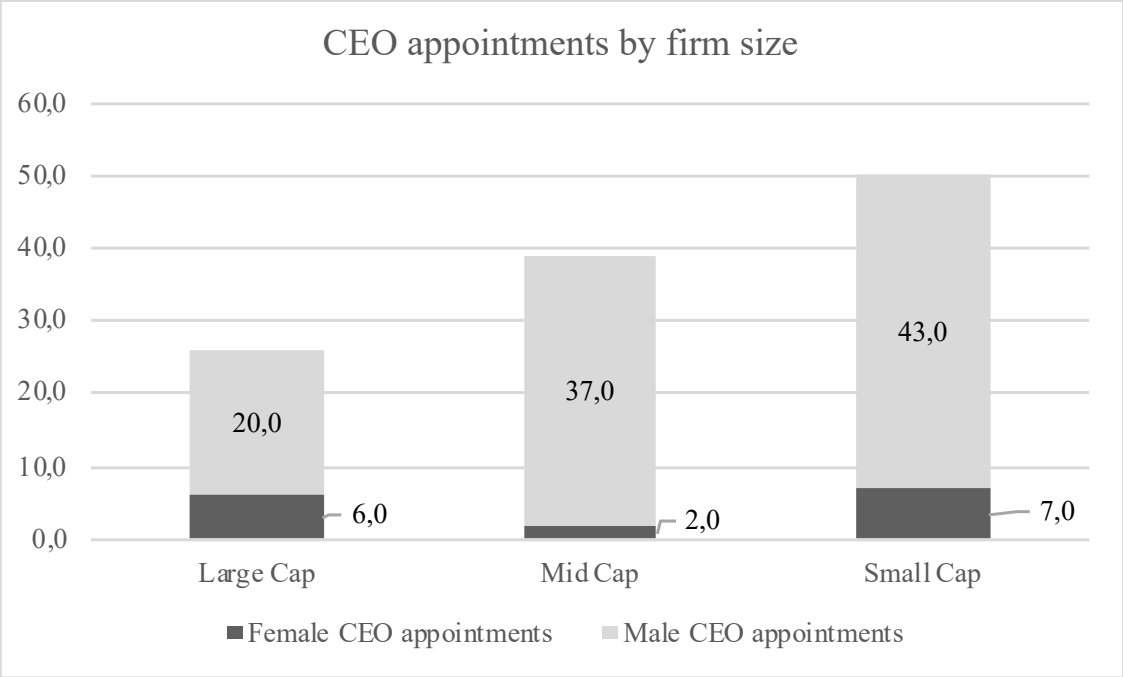
Table 5 Descriptive statistics

	Female Directors	*Female Executives*	*Board size*	*Executive team size*	*Director average age*
Mean	1,65	1,51	6,19	7,08	55,49
Standard Error	0,10	0,13	0,17	0,27	0,39
Median	2	1	6	7	55,6
Mode	1	1	6	6	51,3
Standard Deviation	1,05	1,40	1,78	2,89	4,16
Sample Variance	1,11	1,95	3,16	8,34	17,28
Kurtosis	0,37	2,24	-0,12	-0,08	1,62
Skewness	0,60	1,36	0,39	0,41	-0,68
Range	5	6	8	13	26
Minimum	0	0	3	1	38,5
Maximum	5	6	11	14	64,5
Sum	190	174	712	814	6381,2
Count	115	115	115	115	115

Figure 6 displays how the succession events in the data were divided based on firm size. While 26 successions occurred in Large Cap firms over the sample period, the number of succession events in Small Cap firms was almost double. Thus, although large and small

firms had seemingly as many female CEO appointments, the precentral difference is significant. Of large firms 23% of appointments were women, whereas the number for small firms was 14%. Secondly, Mid Cap firms seem to follow a different trend, with only 2 female succession during the five-year period. The ratio of female appointments to all appointments is only 5% for midsized firms. Thus, low number of female successions in Mid Cap firms can be expected to affect the regression results.

Figure 5 CEO succession events by gender and firm size



4.1.2. Correlation analysis

Second, the correlation analysis brings further insight into how variables in the equation are associated with one another. Although the basic principle is similar, correlation differs significantly from regression analysis. While regression analysis aims to identify causal relationships between variables, correlation analysis only shows the degree to which variables related to one another (Creswell, 2015). However, correlation does not show cause, and relationships may involve other variables to fully explain the effect.

Furthermore, if a linear relationship exists between two variables, correlation does not show which variables causes the other. Thus, correlation analysis shows some bivariate associations in the data set to frame the following logistic regression analysis. Particularly important for logistic regression is that independent variables are not strongly correlated (Alin, 2010).

The correlation table (Table 6) shows significant correlations between several variables. For the correlation analysis, dummies for firm size and industry are transformed into categorical variables. CAP signifies firm size, where 1=Large Cap, 2= Mid Cap and 3= Small Cap firms. Similarly, the variable INDCODE is 1=female dominated, 2=equal and 3=male dominated industries. Thereby, the sign of possible relationship indicates towards which end of the spectrum the correlation occurs.

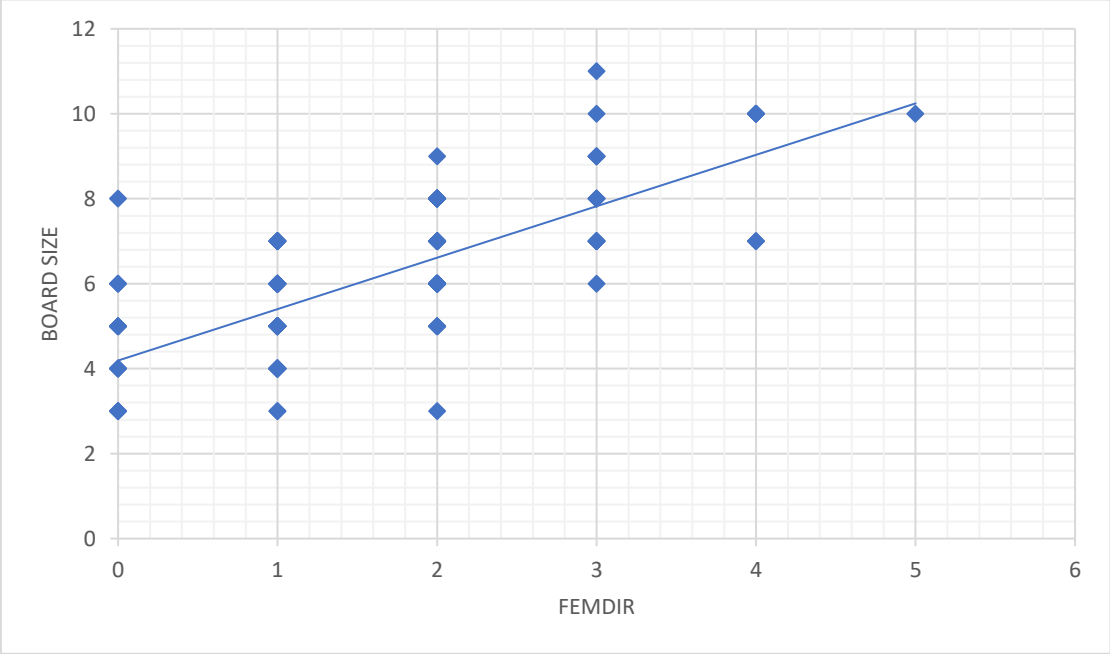
Firstly, the number of female members and all members of boards of directors and executive team have a moderate negative relationship with firm size at significance level 0.05. This shows that the size of the board of the directors (-0.617) and executive teams (-0.535) shrinks when moving from large firms to small firms. Simultaneously, the number of woman directors (-0.525) and the number of woman executives (-0.360) decreases along with firm size. In addition, a weak negative relationship (-0.2) can be identified between firm size and director average age. Furthermore, smaller companies seem to have a slightly higher tendency (0.184) to appoint CEOs from within the company.

In addition, the correlation matrix illustrates that the gender division in the industry is linked to variables like the number of female executives (-0.282) and directors (-0.261), and board size (-0.251). This shows that firms in female dominated industries tend to have slightly more female directors and executives than male dominated industries. In addition, board size seems to shrink slightly when moving to equal or male dominated industries.

The regression matrix also shows interesting correlations between the number of females on boards and executive teams and the size of those teams. For the purpose of this study,

this brings insight into the number of females relative to the whole group, which may affect their degree of influence. A strong upward linear relationship can be found between the number of female directors and board size (0.717). As seen in Figure 7, when the number of women increases, so does the size of the board. Interestingly enough, the same trend, although more moderate, is seen in executive teams. Executive team size shows a moderate positive linear relationship (0.509) with the number of female executives. Moreover, board size is also positively correlated with executive team size. In addition, the number of female executives also seems to have a positive relationship with the appointment of female CEOs, with P value 0.228 at significance level 0.01. Overall, the correlation analysis seems to indicate that firms with larger boards of directors also have larger executive teams, and both entities seem to have more female members. In addition, the correlation matrix seems to indicate that the number of females in different units of observation are linked, which indicate that gender spillover effects may occur.

Figure 6 Correlation between board size and number of female directors



The most central issue for conducting correlation analysis is to identify possible multicollinearity concerns between the independent variables. The independent variables in model 3, FEMDIR and FEMEX show a moderate correlation (0.445) at significance

level 0.01. this indicates a mild upward linear relationship between independent variables. According to Midi et al. (2013) multicollinearity becomes a serious issue in logit regression if correlation is greater than 0.8, however, it may occur with weaker correlations as well. Thus, additional testing is conducted to identify or rule out these concerns.

Table 6 Correlation table

	CAP	IND CODE	CEO GEN	FEM DIR	BOARD SIZE	FEM EX	EX SIZE	IN COMP	IN BOARD	DIR AGE	ROE	INT
CAP	1											
INDCODE	.120	1										
	.201											
CEOGEN	-.070	.015	1									
	.457	.870										
FEMDIR	-.525**	-.261**	.153	1								
	.000	.005	.102									
BOARDSIZE	-.617**	-.251**	.075	.717**	1							
	.000	.007	.426	.000								
FEMEX	-.360**	-.282**	.228*	.445**	.441**	1						
	.000	.002	.014	.000	.000							
EXSIZE	-.535**	-.090	.007	.460**	.526**	.509**	1					
	.000	.341	.937	.000	.000	.000						
INCOMP	.184*	.090	.020	-.135	-.265**	-.036	-.032	1				
	.049	.340	.828	.150	.004	.701	.737					
INBOARD	.160	-.003	-.025	-.063	-.209*	-.021	-.003	.371**	1			
	.088	.978	.793	.506	.025	.822	.971	.000				
DIRAGE	-.200*	.142	-.050	.149	.168	-.052	.115	-.203*	-.166	1		
	.033	.131	.594	.113	.072	.583	.223	.029	.076			
ROE	.146	.150	.058	-.030	-.101	-.299**	-.112	-.063	.052	.095	1	
	.120	.109	.537	.752	.281	.001	.235	.501	.580	.314		
INTERIM	.015	.095	-.061	.008	-.097	-.119	.008	.106	.168	.043	.057	1
	.876	.318	.524	.929	.308	.208	.932	.264	.075	.648	.550	

The top row for each variable shows the bivariate Pearson Correlation. The bottom row for each variable shows the P value for each correlation.
** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed).

4.1.3. Multicollinearity test

As stated, a particular concern with the third model is multicollinearity. This refers to a linear relationship between two or more independent variables, which may distort the results of logistic regression (Alin, 2010). Generally, the likelihood of multicollinearity increases with the number of independent variables. However, although model 3 only contains two independent variables, the moderate correlation between FEMDIR and FEMEX may be a concern. Because high correlation can imply multicollinearity, Variance inflation factors (VIF) analysis is run to test for multicollinearity between the independent variables FEMDIR and FEMEX (Alin, 2010). Results from the VIF test can be seen in Table 7. VIF can be calculated as 1/Tolerance, which due to which if one value is 1.0, the other is as well. VIF equal to 1.0 indicates no multicollinearity between independent variables.

Table 7 VIF test results for multicollinearity

Variable	Tolerance	VIF
FEMDIR	1.0	1.0
FEMEX	1.0	1.0

4.2 Regression results

This thesis used binary logistic regression to investigate how the gender composition on boards of directors and executive teams is connected to the likelihood of female CEO succession. The method allows identification of causal relationships between the predictors and the probability that either of the binary outcomes occurs. Simultaneously, the method allows controlling for multiple variables that may have an impact on the model. The regression included three models, which were based on the three hypotheses presented before. Each model is evaluated in a separate subsection, looking at the model fit and the possible significant relationships in the model. The regression output for each of the three models can be found in Table 8.

Table 8 Logistic regression results

	Model 1		**Model 2**		**Model 3**			
							95% CI for EXP(B)	
Variable	B	Exp(B)	B	Exp(B)	B	Exp(B)	Low	Upper
SMALLCAP	1.067	2.906	1.339	3.814	1.195	3.304	.230	47.402
MIDCAP	3.124** (0.10)	22.734**	3.510** (0.09)	33.459**	4.840** (0.08)	126.406**	3.482	4588.493
MALEIND	-.598	.550	-.354	.702	-2.327	.098	.005	1.753
EQUALIND	-.056	.946	-.085	.918	-.882	.414	.026	6.703
FEMIND								
BOARDSIZE	-.057	.944	-.071	.932	-.212	.809	.393	1.666
INCOMP	.091	1.096	.060	1.062	.114	1.121	.223	5.638
INBOARD	.086	1.090	-.010	.990	-.214	.808	.089	7.286
DIRAGE	-.104	.901	-.104	.901	-.073	.930	.775	1.116
ROE	.028	1.028	.029	1.030	.035	1.035	.988	1.085
INTERIM	.903	2.468	1.091	2.978	.941	2.561	.341	19.257
YEAR 2015	-.795	.452	-.997	.369	.027	1.028	.067	15.737
YEAR2016	1.752	5.768	1.683	5.383	3.249* (0.33)	25.770*	1.291	514.376
YEAR2017	.682	1.978	.690	1.994	2.105	8.205	.730	92.211
YEAR 2018	.935	2.547	.773	2.166	2.179	8.836	.673	116.057
YEAR 2019								
EXSIZE	-.191	.826	-.268	.765	-.567* (0.46)	.567*	.325	.989
FEMDIR	.960 (0.08)	2.613			1.830* (0.26)	6.231*	1.239	31.339
MASS 0			-21.552 (0.998)	.000				
MASS 1			-2.521 (0.105)	.080				
MASS2			-1.388 (0.208)	.249				
MASS 3			(0.998)					
FEMEX					1.178** (0.02)	3.249**	1.537	6.866
Pseudo R2 (Nagelkerke)	0.286		0.240		0.451			
Number of observations	115		115		115			

The Table shows the B values and odds ratios (Exp(B)) for all variables in each model. 95% Confidence intervals are shown for the third model. ** Correlation is significant at the 0.01 level. * Correlation is significant at the 0.05 level. P-value shown for significant variables in parentheses.

4.2.1. Hypothesis 1

Hypothesis 1 states that the likelihood of appointing a female CEO increases when there are more female directors on the board of directors. Using the number of female directors as the only predictor, the first logistic regression is formulated. The Omnibus Test of Model Coefficients for Model 1 (Table 9) shows Sig > 0.05, indicating a poor model fit. In addition, the Hosmer and Lemeshow Test for model 1 (Table 10) shows a low P value, which implies that the model fit is poor. The B value for FEMDIR in Model 1 (Table 8) is near 0, which implies that the relationship between the predictor and outcome is weak. In addition, the Female Director coefficient in (Table 9) shows Sig=0.80, indicating that the relationship is non-significant. Thereby, controlling for the other variables in the model, the null hypothesis cannot be rejected. This implies that more predictors may be needed to create a model with stronger predictive capabilities.

Table 9 Model fit by Omnibus Test of Model Coefficients

	Model 1	**Model 2**	**Model 3**
Chi square	19.105	21.530	31.723
df	16	18	17
Sig	.263	0.254	0.016**

4.2.2. Hypothesis 2

Hypothesis 2 states that the likelihood of appointing a female CEO increases considerably once the critical mass of three or more female directors is achieved. Again, the Omnibus Test of Model Coefficients (Table 9) shows a poor model fit for model 2. As seen in Table 8 significance for all categories of the independent variable are considerably above 0.05.

Hence, the null hypothesis cannot be rejected with the current data. Taking a closer look at the sample, it is concluded that there an insufficient number of events in the outcome category of female CEO successions in all four predictive categories. Because the sample contains only 15 events that fall into the category 1 (female CEO) the number of Events Per Category (EVP) with four categories is low. Thus, the non-significant results are likely to be a result a low EVP.

4.2.3. Hypothesis 3

Hypothesis 3 predicts that the likelihood of appointing a female CEO increases if there are more females in the top executive team and the board of directors in the company. First, the Omnibus Test of Model Coefficients (Table 9) is evaluated to see that all models fit equally well (Sig < 0.05), where Sig. 0.016 indicates that the results are significant and the model fits well. While logistic regression does not produce an R^2 value to quantify variance, it relies on different pseudo-R^2 values to indicate the variance of the dependent variable that is accounted for by the model. Based on the Nagelkerke pseudo R square 0.463 (Table 8), the model accounts for 46.3% variance, which is considered good for the context. The Hosmer and Lemeshow Test for the third model further suggests a good model fit as the significance value 0.946 is notably above the widely accepted threshold value 0.05 (Table 10). Therefore, the model seems to be fitting and the results may be assumed reliable. Yet the slightly low EPV 7.5 in the multiple logistic regression must be acknowledged, as it may weaken the results.

Table 10 Hosmer and Lemeshow Test

	Model 1	**Model 2**	**Model 3**
Chi square	8.818	5.958	2.800
df	8	8	8
Sig	0.358	0.652	0.946

The predictive capability of the model (Table 11) shows that the model has significantly higher accuracy in predicting the appointment of male successions (96.9%), compared to female successions (33.3%). Overall, the percentage of correct predictions in the data set was 85.4%. Considering the relatively small data set, particularly the small number of female succession events, this predictive capability can be considered relatively good.

Table 11 Classification table for correctly predicted outcomes for model 3

Predicted CEO gender	Correct	Incorrect	Correct predictions
Male	95	3	96.9%
Female	10	5	33.3%
Total	105	8	85.4%

Because model 3 passes all model fit tests, a closer look is taken the logistic regression output (Table 8). First, looking at the significance values of the relationship of female directors 0.026, and female executives 0.002 with female CEO appointment, both are determined significant with Sig<0.05. Thus, the relationships the dependent variable and both independent variables are significant and controlling for the variables in this model, the null hypothesis can be rejected.

The B coefficient shows the values for predicting the dependent variable from the independent variables. The higher this value is, the higher the likelihood that a female CEO is selected as a result of changes in the predictor. The B value for female directors shows a large increase (1.830) in the odds, while for female executives the increase is significant but smaller (1.178). The coefficients are in log-odds units, due to which they are converted to odds ratios for further interpretation. Euler's constant to the power of B coefficient (Exp(B)) shows the odds ratio, that is, the exponentiation of the B coefficient. Exp(B) for female directors is (6.213 -1)x100%=521%, which shows that odds of female CEO appointment increase with one unit increase in female directors. Respectively adding one female to the executive team prior to CEO appointment increases the odds by (3.249-1)x100%=225%. To assess the estimate of the odds ratios for both predictors, the 95% confidence interval (CI) is examined. This measure shows that the odds ratio falls between the low and upper values with 95% confidence. The 95% CI for female directors is relatively wide 1.239-31.339, which may suggest the need for a larger sample size. However, the 95%CI for female executives is between 1.537-6.866, which gives a good estimate for where the odds ratio can accurately fall. Overall, controlling for all the variables in the equation, hypothesis 3 is supported.

4.2.4. Control variables

In addition to the confirmed relationship between the independent variables and dependent variable in hypothesis 3, there are some notable relationships present in the control variables which require a closer investigation. Not seen in Table 15, the average age of female directors was controlled for by eliminating entries without female directors. This test yielded insignificant results for female director average age. All other control variables are shown in Table 15. Significant relationships (Sig < 0.05) are found in three variables: Mid Cap firms (Sig=0.008), year 2016 (Sig=0.033), and executive team size pre-appointment (Sig=0.46).

Firstly, by examining the B coefficient for Mid Cap firms, a significant positive relationship is identified. Exp(B), however, shows a drastically high odds ratio (126.406), which, again, is most likely a result of data limitations. While there are only two female succession events in this category, the results are consequently drastic. Thus, conclusive results cannot be drawn from this finding.

Secondly, year of succession announcement was controlled for to identify possible significant differences related to the time frame. Table X indicates significance in the control for 2016. While the B value 3.249 shows a significant positive increase in the dependent variable, Exp(B) = 25.770 is extremely high. This may indicate that in 2016 the relationship between female representation on executive teams and boards began to have more influence in female appointment decisions. The data shows that number of female appointments increased after 2015, as did the number of female executives. The results may indicate that this increase occurred in the same firms in 2016, which caused the relationship to strengthen in that year. However, this finding is inconclusive.

Thirdly, the size of executive teams prior to the CEO appointment shows a significant relationship with the dependent variable, however, Sig=0.046 is only slightly below the guideline of 0.05. The B value -0.567 shows a decreasing relationship. Consequently, the odds ratio 0.521 shows that increasing the size of the executive team decreases the odds of female CEO appointment by 52%.

5. DISCUSSION AND ANALYSIS

The analysis brought several insights for the purpose of this study. The results of the logistic regression analysis indicate that the number of women on boards and executive teams combined have the strongest predictive accuracy in estimating the likelihood of female CEO appointment. However, the number of women on the board of directors alone does not have a significant relationship with female CEO appointment. What is more, no relative or absolute threshold number for women directors could be determined with the existing data. These findings can all be linked to the literature presented in chapter two, which is discussed next.

5.1. Absence of critical mass

The first and second hypothesis aimed to understand the relationship between the number of female directors and female CEO succession. The first, more specifically, aimed to confirm the basic gender spillover theory of Matsa and Miller (2011) and Elsaid and Ursel (2011) between boards and CEOs. Surprisingly however, the results for the simple logistic regression between number of women on the board of directors and female CEO succession yielded statistically insignificant results. The second hypothesis aimed to investigate critical mass theory in the context of publicly listed Finnish firms. As discovered by You (2019) having the critical mass of three female diretors increases the odds of female CEO succession significantly. However, the results were also statistically insignificant. Since both models addressed the same issue from different perspectives, it may be beneficial to examine these results and their possible causes jointly.

The small sample size created a major limitation for each regression model. The total number of 'female CEO' outcomes was only 15. Looking at model two, which examined the critical mass hypothesis, this was particularly challenging. Because each of the four predictor

categories contained less than than six events per female succession, none of the categories was strong enough to produce significant resutls. Because this could be considered a population study, even non-significant results bring critical insights into the issue in the Finnish context. For instance, the lack of boards that contain a critical mass of female directors overall is concerning. Figure 8 illustrates that reaching critical mass on boards of directors is still uncommon. In fact, only 17% of boards in the sample had three or more women. Even more surprising was that 45% of these boards were in male dominated industries, 45% in gender equal industries and only 10% in female dominated industries. This can be linked back to the findings of Tyrowicz et al (2020), who argue that general female representation in the labor market may not be correlated with female participation in leadership. The assumption that females would be found in the leadership of traditional female driven does not seem to be the case. However, the sample represents only companies where new CEOs were appointed and therefore leaves out boards that did not appoint CEOs during the time frame. Thus, alternative explanations can be linked to board composition and CEO turnover in certain sectors and industries, which requires further research.

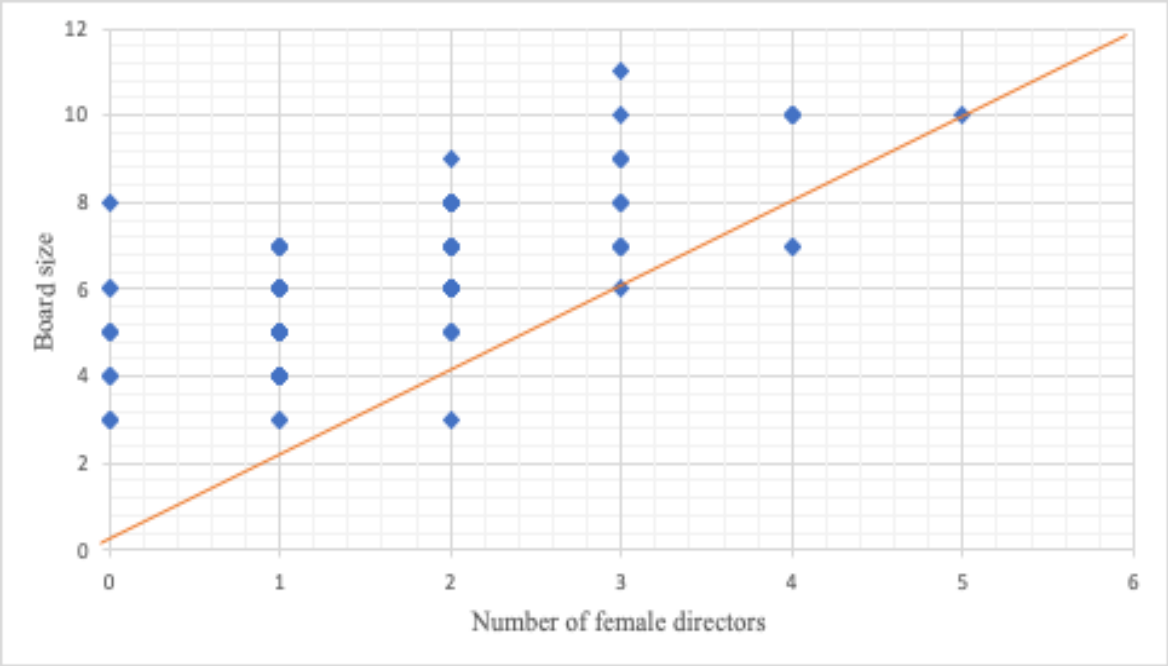
The same trend continues when examining female successions. As many as 10 (66%) of female CEO successions occurred in male dominated industries, including telecommunications, industrials, technology and basic materials. Firms in gender equal industries, mainly goods and services appointed four female CEOs, whereas only one was appointed in the healthcare sector, which is considered a female dominated industry. This finding is not in line with You (2019), who discovered that industry female receptiveness, which was measured by the gender representation had a significant positive relationship with female CEO succession. What is more, Matsa and Miller (2011) explain half of the correlations by industry differences, which seems to not be the case in Finland.

The lack of women CEOs in Finnish stock listed firms is alarming in itself. However, it may partially be explained by the even more alarming trend between board size and the number of female directors. In fact, as seen in Figure 8, when the number of female directors

increases, so does the size of the board. Therefore, instead of women replacing men on boards, it may be the case that women tend to be added in addition of men. Another explanation is that women are appointed on larger boards, where their presence is balanced by also having more men. Both explanations allude to the idea that women are still not treated equally to their male peers in terms of board appointments. Because of this, although the absolute number of women may increase, their representation relative to men does not. This, in turn, may decrease the degree of influence that female directors possess (Lafuente and Vaillant, 2019). According to Lafuente and Vaillant (2019), gender balance, which refers to an equal number of women relative to men, is more effective for increasing female influence than critical mass. However, gender balance seldom occurs on board of directors. The line illustrates where gender balance would be achieved. Data points below the line depict boards with a female majority and points above the line show boards with a male majority. Thus, the scatterplot shows that the vast majority of boards have a male majority. This indicates that female directors remain a clear minority in most firms. This may explain why the number of women on boards alone has not been sufficient enough to increase female CEO appointments.

On the other hand, Cook and Glass (2015) present the argument that more important than numbers is the relative influence of female directors. This influence was measured by the links to other board held by female directors. While the number of female directors is clearly not a strong enough predictor for female CEO succession, an alternative explanation for the occurred female succession may be in the relative influence theory. The relative influence was not the focus of this study, however, it presents an interesting topic for further research in the Finnish context.

Figure 7 The line of gender equality on boards



Having a majority of women on boards of directors is still extremely rare. In addition, achieving gender balance on boards of directors is uncommon. Because of this, detecting its impact on female CEO appointment is challenging. However, although the number of directors alone was not a strong predictor for female CEO succession, the model that combined the number of female directors and executives produced significant results. Thus, although the first two hypohteses were not supported, the third brought interesting insights into gender spillover effects.

5.2. Gender spillovers

The third hypothesis incorporated the assumption that gender spillover effects may require a wider set of variables. Although the number of directors alone was not a strong predictor for female CEO succession, combined with the number of female executives it produced statistically significant results. The results for the third model showed that adding one female

executive team doubles the odds of female CEO succession. At the same time, the odds of female CEO succession increase five times by adding a female director to the board. These findings offer strong support to the gender spillover theory. However, it shows that female representation needs to be high on both the executive team and board of directors to have a strong impact on the likelihood of female CEO appointment. As most previous research has emphasized the role of the board of directors in isolation, this finding is not directly in line with previous literature. However, You (2019) for example offers some indications of the joint effect of increasing directors and executives.

For instance, You (2019) discovered the importance of female friendliness in addition to critical mass on the likelihood of female CEO seleciton. You (2019) measured female friendliness by the number of female executives, the gender gap in executive pay, and the number of male directors that had links to other boards of firms led by female CEOs. While the two latter variables were not included in the analysis due to limited availability of information, the first is in line with the results of this study. Following the theoretical approach of You (2019), firm female friendliness can explain why female executives have such a significant impact in the model. Firms, which appoint females to top executive positions are more likely to trust the competence of a woman as CEO. Furthermore, having more women on executive teams sends a signal to potential candidates that the firm values women, thereby attracting more high potential talent. Therefore, firms with more female executives are likely to receive more interest from highly competent female CEO candidates. This further increases the chances that a woman is appointed as CEO over a male candidate.

In addition to female executives signaling that the firm values women leaders, it may also offer directors a chance to observe the performance of women in top executive positions. As argued by Phelps (1972), discriminatory behavior is amplified by information asymmetry. In other words, when directors on the board have little knowledge about the competence and performance of female candidates, they are more likely to resort to stereotyping. Thus, when directors are able to observe strong performance of female executives first hand, their

perception towards female CEOs may shift. Once directors have evidence from within the firm that women are equally qualified for executive tasks as males, they may approach CEO succession with a more open mind. Thereby, having multiple female non-CEO executives can increase the likelihood of female CEO succession by reducing information asymmetry.

Another possible and likely explanation is that an increased number of female executives increases the pool of potential CEO candidates. From an increased group of prospects, the likelihood of a woman being selected is higher. For instance, Milkman and McGinn (2012) found how having more female executives enhances the career mobility of women at junior levels of the company. This helps them reach higher managerial positions, which further increases prospects for the top executive positions. In addition, Masta and Miller (2011) present the argument that the likelihood of a female CEO is higher in firms where there are more potential candidates. Initially, this refers to the number of female directors. For example, Gupta and Raman (2019) found that the increasing the number of female directors is positively related to female CEO succession only when the CEO is appointed from within the board. The authors argue that instead of female directors being more influential in larger groups, their increase provides a wider pool of CEO prospects. If this argument is true, a similar effect could be assumed to occur in executive teams. Thus, intuitively it can be assumed that the high combined effect of female executives and directors on CEO succession could be a result of having more competent female CEO candidates.

5.3. Cultural considerations

This study provides significant new insights into gender spillovers in top leadership in Finland. Because the findings seem to change from one cultural context to another, the results from one country may not be internationally generalizable. However, increasing the geographic coverage of research on gender spillovers has multiple benefits. By understanding the relationship between corporate boards, executive teams and CEO succession in different

countries, cross-comparative studies can be conducted. This can offer valuable insight into how gender spillovers are related to the environment in which they occur. Secondly, cross-cultural understanding of gender equality can offer examples for benchmarking best practices. By comparing these findings with those found in the U.S. market, clear differences can be found, which require closer examination.

Considering the possible reasons for why the results particularly for hypothesis one and two are different than expected, the cultural context cannot be ignored. Most studies on critical mass draw on U.S. based Fortune 500 or Fortune 100 firms as their sample (Konrad et al., 2008; Kanter, 1977; You, 2019). In these studies, critical mass has been proven essential for enabling female inclusion and influence in decision-making. Furthermore, the several studies conduced in the U.S. have raised awareness of the inequality present in large U.S.corporations. This may, however, not be the case in Finland. In fact, Ylöstalo and Brunila (2017) highlight that because Finland is portrayed as a strongly equality-driven society, it may be experiencing the opposite effect. Because the majority in Finland believes that gender equality already exist, it may be difficult to encourage people for further improvement (Ylöstalo & Brunila, 2017). Futhermore, the authors found that because the topic is so sensitive, bringing up gender equality issues tend to cause defensive reactions (Brunila & Ylöstalo, 2015). Therefore, gender issues are often marginalized and challenged in Finnish firms. The approach to gender seems relatively fragmented in the sample firms, meaning that there is no one way that firms address gender equality. Therefore, idetifying a clear thredshold where female directors gain influene is impossible at this stage. However, this fragmentation may be caused by the lack of public discussion about the the areas that still need improvement. As long as firms assume that gender equality is already achieved, significant improvement is unlikely to occur.

In addition, Finnish gender equality investigations have highlighted some challenges that hinder female career advancement particularly in Finland. Each of these concerns has also received attention in the literature. One specific concern is work-family conflict (Halttula &

Saikkonen, 2020). Although Finland has exceptional institutional and financial support for parenthood, the burden of work-family conflict still often falls on women. In a culturally similar context in Sweden, Keloharju, Knüpfer and Tåg (2016) found that women experience more career interruptions due to family matters than men, despite having fewer children. The unequal work-family balance may be one of the key obstacles that prevent the increase of female CEOs, executives and directors.

Other reports in Finland have highlighted the tendency for women to self-distance and exhibit submissive behavior in groups (Horttanainen & Kajala, 2020). As expressed by Oakley (2000) the supply of female CEO candidates can also be limited due to the expectation that females adapt and blend in rather than voice ideas. Particularly, when group minorities consist of only one or two members, they tend to conform to the majority opinions due to group pressure dynamics and the fear of discrimination or hyper-scrutiny (Torchia et al, 2011, You 2019). Because most boards of directors in Finland (83%) only have two or fewer women, this may be a significant concern. Due to the generally low number of female directors, submissive behavior is more likely to occur on Finnish boards. However, when the women on the executive team are taken into account, the situation changes. This may indicate that having more women in the upper echelons in total encourages female directors to take more dominant roles in decision making. Even if executives and directors do not directly interact, the existence of more women may signal that their opinions are valued (You, 2019). Thus, females are more likely to be chosen as CEOs when the overall number of females increases in the upper echelons of the firm.

Futhermore, the lack of effort on the part of employers to support the career advancement of women is a key reason found for gender inequality specifically in Finland (Horttanainen & Kajala, 2020). The lack of support can be seen in recruitment processes which favor male candidates, work hour expectations which ignore family commitments and the lack of mentoring and support tailored for women (Turunen & Linnainmaa, 2018). Looking at the literature, this may indicate that discriminatory behavior exists in some organizations

(Phelps, 1972; Wolfers, 2006; Heilman, 2001). On the other hand, the lack of career support for women may be due to the perception that women have weaker managerial aspirations than men (Hoobler et al., 2011). In this case, firms have more female executives exhibit a tendency to support women in reaching top leadership positions. Therefore, those companies are likely to be in favor of a female CEO. On the other hand, companies with fewer women in the upper echelons in total may offer less support. Thus, Finnish companies should be mobilized to place equal effort towards supporting women in their careers.

In practice, there are several ways in which firms can address this issue. Turunen and Linnainmaa (2018) for instance, propose some remedies to encourage gender diversity in firms. To begin with, companies should make strategic commitments to increase diversity and improve the upward career mobility of women in the organization. This may involve restructuring recruitment processes to equally consider and encourage candidates of both genders for managerial positions. As seen in the literature, receiving support and challenging tasks are linked to the managerial aspirations and performance of women (Hoobler et al., 2011). Thus, as proposed by Horttanainen and Kajala (2020) personal development and mentorship programs can produce valuable outcomes for the career mobility of women. In addition, the literature shows that work-family conflict is one of the key challenges for women to personally strive for top leadership positions (Gabaldon et al., 2015). Thus, empowering women to aspire to executive positions may require flexibility from the firm. As proposed by Turunen and Linnainmaa (2018), companies should take into consideration the work-life balance even at the highest executive positions by giving up the working around the clock mentality. By taking these measures, women are allowed an equal opportunity to gain relevant experience and exposure, and a positive example can be set in the organization.

5. CONCLUSIONS

5.1. Main findings

The purpose of this thesis was to understand how the gender composition of boards of directors and executive teams affects the likelihood of female CEO succession. This relationship was tested with three hypotheses. Firstly, following the research of Matsa and Miller (2011), it was hypothesized that the likelihood of appointing a female CEO increases when there are more female directors on the board of directors. The test for hypotheses one yielded nonsignificant results. Secondly, based on theoretical contributions of You (2019), the second hypothesis assumed that the likelihood of appointing a female CEO increases significantly with the critical mass of three or more female directors. This test also yielded nonsignificant results. Thus, no definitive conclusions could be made about the relationship between women on boards and CEO succession in Finland.

The third hypothesis combined theoretical contributions of several authors (You, 2019; Matsa & Miller, 2019, Milkman & McGinn, 2012). Based on the idea of increasing the pool of candidates and reducing information asymmetry about female competence in leadership, the third hypothesis was formulated. It proposed that the likelihood of appointing a female CEO increases if there are more females in the top executive team and the board of directors. The results showed a significant positive effect on the odds of female CEO succession. While adding one female executive doubled the odds that a woman was chosen as CEO, increasing one director increased the odds five times. This may indicate that for a company to appoint a female CEO, the female representation must first rise in both the executive team and the board of directors.

5.2. Contributions

This study made several theoretical contributions to the literature. Previous research on the relationship between board gender composition and female CEO appointment has offered mixed results, and it has mainly concentrated on the largest corporations in the US. Although various gender equality investigations have been conducted in Finland, this relationship has not previously been examined in the Finnish context. Thus, conducting further research on this topic, particularly in the Finnish context, was justified. Furthermore, this study used the number of both female executives and female directors as predictors for female CEO succession, which had not been done in previous literature. Based on the assumption that female directors and executives provide a pool of potential CEO candidates, both entities were seen as critical components in CEO succession. Instead of critical mass, the results seemed to indicate that spillover effects in the upper echelons require increasing female representation at the executive and board level first.

In addition, the results of this study present some managerial implications. As seen in this thesis, female CEO succession does not occur by chance, but requires increasing the number of women in the upper echelons systematically. This requires firms to adopt some mechanisms found to encourage the career development of women. Such mechanisms can include reshaping hiring practices for managerial positions to be gender neutral, offering mentorship and self-development programs for women and reducing work-family conflicts by offering flexibility in working hours By taking these measures, women are allowed an equal opportunity to gain relevant experience and exposure, and a positive example can be set in the organization.

Finland has clearly shown notable improvement in gender equality over the years. As a result, it often ranks among the top countries in terms of gender equality. This may lead practitioners to think that full equality has already been achieved, which is not the case. By identifying the biases and organizational shortcomings that lead to potential discrimination of women in the

upper echelons, active behavioral changes can be made. In addition, maintaining active public discussion about the areas of gender equality that may still need improvement can encourage correct managerial action.

5.3. Suggestions for further research

When evaluating the results of this study, several ideas for further research arose. This study was conducted at an early stage of CEO gender diversity development in Finland. Therefore, the sample size was small, which affected the results and made it challenging to identify statistically significant relationships between the variables. Therefore, the first suggestion for further research is to conduct a similar study when the population of female CEOs has grown. This would allow identification of possible developments in this area and trends that could not be detected with such a small sample size.

Secondly, further research is needed to incorporate the multitude of additional factors that may influence CEO succession. A more in-depth study is suggested that includes a wider set of control variables particularly on CEO and director characteristics. The CEO appointment decision is naturally affected by a wide set of characteristics of the candidate as well as the decision makers. These factors may play a central role in selection process. For instance, individual level variables like education, nationality, previous work experience, and links to and among board members should be accounted for to gain a more comprehensive understanding. In addition, the inclusion of employee representatives on the board could be controlled for to understand whether they may influence the CEO appointment decision. With a more robust set of data, it is possible to identify the effect of gender as opposed to other demographic characteristics of the appointed CEO.

Thirdly, further research is suggested to include that possible effects of company restructuring, mergers and acquisitions on the board composition CEO appointment. This can increase the accuracy of results and show whether restructuring may change the CEO appointment trends. In addition, future research should include the degree of

internationalization of the sample companies. This could give more insight into whether international influences shape gender equality in firms.

Finally, further research is suggested to incorporate qualitative methods to understand the experiential side of board diversity and female CEO appointment. Exploring the drivers, experiences and board dynamics in companies that have appointed female CEOs in Finnish stock listed companies is an extremely interesting area for further investigation.

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